STANDARD NIT

FOR PROCUREMENT OF

HIGH CAPACITY HEMM

Along with

Consumable Spares and Consumables for warranty period of one year and Spares & Consumables for post warranty period of [9 years for Hydraulic Shovels upto 15 CuM Bucket Capacity, 14 years for Hydraulic Shovels of 20 CuM Bucket Capacity, 21 years for 20 CuM Electric Rope Shovels and 24 years for 42 CuM Electric Rope Shovels]

EQUIPMENT-WISE EVALUATION

November, 2020

COAL INDIA LIMITED

(A Maharatna Company)

Coal India Limited

(A Maharatna Company)

Tender Number: CIL/C2D/Equipment-wise/PRE-NIT **Dated 27.11.2020**

Tender Document

For the Supply, Installation and Commissioning of ---[HEMM]---

Along with

Consumable Spares and Consumables for warranty period of one year and Spares & Consumables for post warranty period of [9 years for Hydraulic Shovels upto 15 CuM Bucket Capacity, 14 years for Hydraulic Shovels of 20 CuM Bucket Capacity, 21 years for 20 CuM Electric Rope Shovels and 24 years for 42 CuM Electric Rope Shovels]

Coal India Limited
Coal Bhawan
Premises No. 4, Action Area 1A,
New Town, Rajarhat,
Kolkata – 700156
INDIA

This Tender Document comprises the following Sections:

1	Section – I	Invitation for Bids (IFB)
2	Section – II	Instructions To Bidders (ITB)
3	Section – III	General Conditions of Contract (GCC)
4	Section – IV	Special Conditions of Contract (SCC)
5	Section – V	Schedule of Requirement (SOR)
6	Section – VI	Technical Specifications
7	Section – VII	Sample Forms including Letter of Bid (LOB)

General Manager (MM)-HOD
For and on behalf of Coal India Limited

INDEX

Section III - General Conditions Of Contract (GCC)…..…….……..

Section IV - Special Conditions Of Contract (SCC)…….……

Section V - Schedule of Requirements…..……
Schedule of Requirements…….

Section VI - Technical Specifications…….

1. Preface – Instructions to Bidders .....
2. Scope of supply.....
3. Specific Site Requirement.....
4. General Requirements.....
5. Equipment Specifications……

Section VII - Sample Forms……...……

10	Details of Training Charges	
11	Contract Format	
12	Security Deposit Bank Guarantee Format	
13	Performance Bank Guarantee Format	
14	Format for Pre-Contract Integrity Pact	
15	Pro-forma of Commissioning Certificate to be Issued by the Purchaser after Successful Commissioning of Equipment / Plant	
16	Format for Bank Details for Electronic Payment	
17	Pro- forma for Equipment and Quality Control	
18	Check list of documents to be uploaded	

Section I - Invitation for Bids (IFB)

Section I - Invitation for Bids

1. Coal India Limited, a Government of India Undertaking with its registered office at Coal Bhawan, Premises No. 04, Action Area 1 A, New Town, Rajarhat, Kolkata-700156, India invites online bids through its e-Procurement Portal https://coalindiatenders.nic.in from the eligible bidders for supply, installation and commissioning of **[Name of Heavy Earth Moving Machinery]** along with Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9 years for Hydraulic Shovels upto 15 CuM Bucket Capacity, 14 years for Hydraulic Shovels of 20 CuM Bucket Capacity, 21 years for 20 CuM Electric Rope Shovels and 24 years for 42 CuM Electric Rope Shovels] for its mining projects as described in Section-V "Schedule of Requirements".

2. The tender document shall be available on the website of Coal India Limited (www.coalindia.in), Central Public Procurement Portal (www.eprocure.gov.in) and CIL's e-Procurement Portal (https://coalindiatenders.nic.in). The offer made on the basis of such tender document shall be considered valid for participating in the online tender on CIL's e-Procurement Portal (https://coalindiatenders.nic.in).

3. There will be no physical/manual sale of tender document. There is no Tender Fee and the bidders can download tender document free of cost from any of the websites mentioned above.

4. **Details of tender**

1	Tender No.	********
2	Type of Tender	Two Bid System with Reverse Auction
3	Estimated value ~~of equipment only~~	Rs. **.00 (Approx.- Rounded off to whole number)
4	Earnest Money Deposit	Rs. ***.00 Lakhs (2% of estimated value of tender or Rs.50 Lakhs, whichever is lower) OR US Dollar …. (based on exchange rate prevailing on the date of preparation of NIT rounded off to the whole number) (EMD in USD is permitted for foreign bidders only)
5	Cost of Tender/ Tender Fee	NIL
6	Subject of Tender	Supply, Installation and Commissioning of [Name of Heavy Earth Moving Machinery] along with Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares and Consumables for a period of [9 years for Hydraulic Shovels upto 15 CuM Bucket Capacity, 14 years for Hydraulic Shovels of 20 CuM Bucket Capacity, 10 years for Crawler Dozers, 21 years for 20 CuM Electric Rope Shovels and 24 years for 42 CuM Electric Rope Shovels]
7	e-Publishing date of Tender	
8	Downloading of Tender Document:	
	(i) Starts on	xx.xx.xxxx From 10.00 hours (IST)
	(ii) Closes on	xx.xx.xxxx Upto [16.00] hours (IST)
9	Seeking Clarification:	

	(i) Starts on	xx.xx.xxxx From 10.00 hours (IST)
	(ii) Closes on	xx.xx.xxxx Upto 16.00 hours (IST)
10	Pre-Bid Meeting	xx.xx.xxxx At 11.00 hours (IST)
11	Online Submission of Offers:	
	(i) Start Date and Time	
	(ii) Last Date and Time	
12	Due date of Opening of Tenders (Cover-I)	xx.xx.xxxx At [16.00] hours (IST)
13	Due date and time of Opening of Cover-II of the Tender and Start of Reverse Auction	Will be done at a later date which will be communicated to the Techno-Commercially acceptable bidders through portal only

6. There is no provision to take out the list of parties which have downloaded the tender document from the above referred website by CIL. As such, bidders are requested to visit the website frequently till the last date and time of online submission of offers to ensure that they have not missed out any corrigendum issued against the said tender after they have downloaded the tender document. The responsibility of downloading the corrigendum, if any, will be of the downloading party. No separate intimation in respect of corrigendum to the NIT (if any) will be sent to the bidders who have downloaded the tender document from website.

7. In the event of the scheduled/extended due date of opening of bids being declared as a closed holiday for purchaser's office or a "bundh", the due date for opening of bids will be the following working day at the scheduled time.

8. The bidders, in their own interest, are requested not to wait till the last moment for submission of bid to avoid last minute rush and local problems related to internet connectivity, law and order, strike, bundh etc. The Purchaser shall not be responsible, if bids could not be uploaded due to such local problems at the bidders' end.

9. Interested eligible Bidders may obtain further information from the office of the purchaser as per address given below:

General Manager (MM)-HOD,
Coal India Limited,
Coal Bhawan,
MM Department,
1St Floor, Premises No. 04,
Action Area 1 A,
New Town, Rajarhat,
Kolkata -700156,
India
Fax: +91 33 2324 4115
Phone: +91 33 2324 4127
Email address: gmmm.cil@coalindia.in

Section II - Instructions To Bidders (ITB)

Instructions To Bidders (ITB)

1. **Requirements for participation in e-tenders**

In order to submit the online offer on CIL's e-Procurement portal, the bidders should meet the following requirements:

a) PC with internet connectivity. It will be the bidder's responsibility to comply with the system requirement, i.e., hardware, software and internet connectivity at bidder's premises to access the e-Procurement website. Under no circumstances, CIL shall be liable to the bidders for any direct/indirect loss or damages incurred by them arising out of incorrect use of the e-Procurement system or internet connectivity failures.

b) Online Enrollment/ Registration with CIL's e-Procurement portal with valid Digital Signature Certificate (DSC). The online enrollment/registration of the bidders on the portal is free of cost and one time activity only. The registration should be in the name of bidder. The DSC of the person bidding online on behalf of bidder (the bidding firm) should be mapped / registered with the name of the bidding firm. It shall be the responsibility of the tenderer to ensure that they get registered with the CIL's e-Procurement portal well in advance and download the documents before the last date and time for the same.

c) The bidders who are eligible for purchase preference for being an MSE / 'Make in India (Class I- Local Supplier)' should enroll their name in Coal India's e-Procurement Portal as "Preferential Bidder" at the time of online enrollment. In case of already enrolled bidders, they are required to modify their existing profile. In order to avail benefits available to preferential bidders, such bidders while submitting their bid against the tender must select to quote as "Preferential Bidder". The necessary documents in support of the eligibility for purchase preference should also be uploaded against the specified tender in order to avail the benefits.

d) Class II or Class III Digital Signature Certificate (DSC).

2. Digital Signature Certificate (DSC)

Bidders may obtain Digital Signature Certificate from any Certifying Authority authorised by Controller of Certifying Authority (CCA) and which can be traced upto the chain of trust to the Root Certificate of CCA.

3. Help for participating in e-tender

The detailed method for participating in the e-procurement is available on links "Help for Contractor" and "Bidders Manual Kit" in CIL's e-Procurement portal. The bidders may also seek help from the 24 x 7 help-desk on 0120-4001002, 0120-4001005 and 0120-6277787. International bidders are requested to pre-fix 91 as country code. All queries will be answered in English / Hindi only.

4. Communication

All communication sent by CIL as well as the e-procurement service provider by post/fax/e-mail/SMS shall be deemed as valid communication. The bidder must provide complete address, fax number, e-mail id and mobile number in his offer.

5. Eligible Bidders

5.1 The bidders must satisfy any of the following conditions to be considered as eligible bidder against the tender (the bidders should clearly indicate in their offer the sub-clause against which they claim to be qualified as eligible bidder):

i) **Foreign Manufacturers**: Foreign Manufacturers of the equipment of tendered capacity or higher are eligible to quote against the tender.

ii) **Indigenous Manufacturers:** Indigenous manufacturers of the equipment of tendered capacity or higher are eligible to quote against the tender. Indigenous Manufacturer can be 'Class-I Local Supplier' or 'Class-II Local Supplier' as defined under Clause-38, ITB, Section-II.

iii) **Indian Agent:** Authorised Indian Agent of a foreign manufacturer or indigenous manufacturer is also eligible to quote on behalf of its principal against the tender, in case manufacturer does not quote directly to any organisation in India as a matter of its corporate policy (except in situations like supplies to OEM /OES/ OPM, supplies of spares and consumables bundled with supply of equipment, supplies to customers not covered by dealer network due to geographical/ logistics constraints). However, in such case, authorised Indian Agent shall have to upload scanned copy of tender specific Manufacturer's Authorization as per Annexure-4, Sample Forms, Sec-VII, signed and stamped by the manufacturer to quote against the CIL Tender, indicating the Tender Reference No. and date along with the offer. The manufacturer is also required to submit a certificate that it is not quoting directly against the tenders of any organisation in India (excepting the situations mentioned above, if applicable) as a matter of its corporate policy and if, subsequently, at any stage, it is found that it has quoted directly to any organisation in India excepting the situations mentioned above, it shall be liable for penal action as per provision of this NIT/ CIL Purchase Manual, if the justification provided by the bidder has not been considered adequate and satisfactory by CIL.

The authorised Indian Agent is to upload scanned copies of details in respect of its organization along with the copies of documents like certificate of incorporation / registration etc. alongwith the offer.

The Indian Agent should be in existence for 3 years on the date of tender opening, irrespective of date of appointment as Indian Agent.

In case an Indian Agent is participating in a tender on behalf of one manufacturer, it is not allowed to participate / quote on behalf of another manufacturer in the same tender for the same item / product. Further, in a tender, either manufacturer can quote or its authorised Indian Agent can quote but both are not allowed to participate/ quote in the same tender. Also one manufacturer can authorise only one agent to quote in the same tender.

All the bids, not quoted as per the above guidelines, will be rejected.

The term 'Agent' broadly includes Distributor, Dealer, Channel Partner etc.

iv) **Indian Office of a Foreign Manufacturer or Indian Subsidiary of a Foreign / Indian Manufacturer:** Indian Office of a Foreign Manufacturer or Indian Subsidiary of a Foreign/ Indian Manufacturer is also eligible to quote. In such case

the bidder shall upload relevant documents to prove their status as Indian office of the foreign manufacturer or Indian subsidiary of the foreign / Indian manufacturer along with tender specific Manufacturer's Authorization as per Annexure-4, Sample Forms, Sec-VII, signed and stamped by the manufacturer to quote against the CIL Tender, indicating the Tender Reference No. and date.

v) **Indian Manufacturing entity of foreign manufacturer:** Indian manufacturing entity of the foreign manufacturer is eligible to bid as Indigenous Manufacturer if the Foreign Manufacturer manufactures equipment of the same or similar capacity as the tendered equipment; and the Indian Manufacturing entity has sufficient facility for manufacturing, supply and After Sales Service Support in India for equipment of same or similar capacity as the tendered equipment. In such case, the bidder shall be required to submit notarized copy of valid Legal Agreement/ Collaboration Agreement/ License Agreement/MOU with foreign (principal) manufacturer for the equipment being offered to prove their status as Indian Manufacturing entity of foreign manufacturer. Such bidders shall be required to submit tender specific declaration by the Principal Manufacturer as per Annexure-4 (a), Sample Forms, Sec-VII, signed and stamped by the principal manufacturer to quote against the CIL Tender, indicating the Tender Reference No. and date. Both the Indian manufacturing entity and its principal manufacturer should confirm to ensure supply of spares, consumables and service support for smooth running of the equipment during its life time.

vi) '**Non-Local Supplier'**: 'Non-Local Supplier' as defined under Clause-38, ITB, Section-II is also eligible to quote.

5.2 Special provisions regarding eligibility of bidders from the countries sharing land border with India (these are as per extant guidelines vide Order (Public Procurement No. 1) no. F/18/2019-PPD dated 23.07.2020 and Order (Public Procurement No. 2) no. F/18/2019-PPD dated 23.07.2020 of Department of Expenditure, Ministry of Finance, GoI; in case of any change prior to one month from the tender opening date, the same will be applicable):

i. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority i.e. Registration Committee constituted by DPIIT, Ministry of Commerce and Industry, GoI.

ii. "Bidder" (including the term 'tender', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

iii. "Bidder from a country which shares a land border with India" for the purpose of the above Order means: -
   a) An entity incorporated, established or registered in such a country; or
   b) A subsidiary of an entity incorporates, established or registered in such a country; or
   c) An entity substantially controlled through entities incorporated, established or registered in such a country; or
   d) An entity whose beneficial owner is situated in such a country; or

e) An Indian (or other) agent of such a country; or
f) A natural person who is a citizen of such a country; or
g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

iv. The beneficial owner for the purpose of (iii) above will be as under:

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who explanation-
   a) "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company;
   b) "Control" shall include the right to appointment majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;

2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one more juridical person, has ownership of or entitlement to more than fifteen percent of property or capital or profits of such association or body of individuals;

4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

v. An agent is a person employed to do any act for another, or to represent another in dealing with third person.

vi. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

vii. The bidders from such countries are required to submit the following certificates in the LoB :

a) **Certificate for Tenders**

"We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; We certify that we are not from such a country or, if from such a country, have been registered with the Competent Authority. We hereby also certify that we fulfil all requirements in this regard and are eligible to be considered [evidence of valid registration by the Competent Authority is attached, if applicable]"

b) **Certificate for Tenders involving possibility of sub-contracting / assignment**

"We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting / assignment to contractors from such countries; We certify that we are not from such a country or, if from such a country, have been registered with the Competent Authority and will not sub-contract/assign any work to a contractor from such countries unless such contractor is registered with the Competent Authority. We hereby also certify that we fulfil all requirements in this regard and are eligible to be considered [evidence of valid registration by the Competent Authority is be attached, if applicable]"

viii. The above provisions will not apply to bidders from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. Uploaded lists of countries to which lines of credit have been extended or in which development projects are undertaken, are available on the website of the Ministry of External Affairs.

5.3 The bidder / manufacturer shall have After Sales Service Support facilities in India like Depot/ Warehouse for supply of spare parts, Workshop facilities for servicing and repair of assemblies, sub-assemblies and equipment, trained technical manpower and training facilities for providing training to CIL's personnel, etc.

Note: [The minimum criteria for After Sales Service Support facilities shall be clearly indicated in the individual NITs]. [EED to provide]

In case the bidder/ manufacturer does not have the After Sales Service Support facilities in India, the bidder will have to submit an undertaking along with its offer that in the event of placement of order on them, they will establish the above facilities in India within the completion period of warranty of the first equipment commissioned. In such case, the bidder shall have to provide additional PBG for 30% of the contract value, which will be released after establishment of After Sales Service Support facilities in India and against submission of normal PBG for 10% of the contract value.

Note: In case the manufacturer is the bidder, the After Sales Service Support Facilities of its Indian Agent/Indian Office of a Foreign Manufacturer or Indian Subsidiary of a

Foreign/Indian Manufacturer may also be acceptable on meeting minimum criteria as stipulated above.

6. Collaboration and License Agreements

i. Collaboration Agreement: In case of Collaboration Agreement or Memorandum of Understanding (MoU) with the principal manufacturer, the collaboration agreement / MoU should be valid on date of tender opening and should also remain valid at least up to supply and commissioning of the last equipment covered in the contract. However, the principal manufacturer has to confirm that supply of spares & consumables and service support will be ensured for smooth running of the equipment during its lifetime. The agreement / MoU evincing collaboration of the Indian Firm / Company with the Principal Manufacturer must be a document registered in India under the provision of Indian Registration Act, 1908, irrespective of likelihood that the same may not be compulsorily registered under the provision of Section-17 of the said Act. A notarized copy of Collaboration Agreement/MOU, duly registered in India as above and undertaking of principal manufacturer to ensure supply of spares & consumables and service support for smooth running of the equipment throughout its life must be uploaded along with the offer.

   In the event of termination of collaboration agreement / MoU, the principal manufacturer will be responsible for the fulfillment of contractual obligations either by itself or through alternate collaborations / arrangements.

ii. License Agreement: In case Indigenous manufacturer, who has manufactured, supplied and serviced the same or similar equipment (to the equipment being offered), is participating under License agreement with the company having valid Intellectual Property Rights (IPR) for the equipment being offered, the License agreement should be valid on date of tender opening and should also remain valid at least up to supply and commissioning of the last equipment covered in the contract.

   The bidder and licensor having IPR for the equipment being offered should confirm to ensure supply of spares & consumables and service support for smooth running of the equipment during its lifetime. The agreements evincing License agreement of the bidder and licensor must be a document registered in India under the provisions of the Indian Registration Act, 1908, irrespective of the likelihood that the same may not be compulsorily registered under the provision of Section-17 of the said Act. A notarized copy of License Agreement, duly registered in India as above and undertaking of principal manufacturer to ensure supply of spares & consumables and service support for smooth running of the equipment throughout its life must be uploaded along with the offer

   In the event of termination of License Agreement, the licensor having IPR will be responsible for the fulfillment of contractual obligations either by itself or through alternate collaborations / arrangements.

7 Provenness Criteria

Procurement against this tender shall be made only for proven equipment. Equipment offered by a bidder shall be considered proven as detailed herein below. The bidders

should clearly indicate in their offer the sub-clause against which they claim to have quoted for proven equipment.

7.1 The equipment offered by the tenderer shall be considered proven provided the [..N..] nos. of quoted model or similar equipment, as defined below, or combination thereof, must have been supplied by the bidder (or Manufacturer in case bidder is not the manufacturer) in India to mining industry and/or to the other Industries (Private or Government/ Public Sector Undertaking) and all of them performed satisfactorily (the definition of "satisfactory performance" is given below in Note-i) for a minimum period of three years from the date of commissioning. The performance of only those equipment would be considered for assessing provenness which have been commissioned 3 years prior to the date of opening of tender but not prior to [10 years] from the date of opening of tender (window period).

[Minimum quantities 'N' will be indicated in specific tenders. This quantity [N] would be equal to 1 number each for Electric Rope & Hydraulic Shovels].

7.2 In case the quoted model or similar equipment, as defined below, has not been supplied by the bidder (or Manufacturer in case bidder is not the manufacturer) in India or if supplied and commissioned in India but the same has not completed required years of performance for provenness as mentioned above, the offered equipment will be considered proven if the minimum worldwide population is of [..N..] nos. of offered or similar equipment or combination thereof which have been commissioned 3 years prior to the date of opening of tender but not prior to [10 years] from the date of opening of tender and all of them performed satisfactorily (the definition of "satisfactory performance" is given below in Note-i) for a minimum period of three years from the date of commissioning. The worldwide population of the bidder will be considered for provenness only when the bidder gives an undertaking that it has not supplied the quoted model or similar equipment in India or if supplied and commissioned in India, the same has not completed required years of performance for provenness as mentioned above at sub clause-7.1.

[Minimum quantities 'N' will be indicated in specific tenders. This quantity [N] would be equal to 5 numbers each for Electric Rope & Hydraulic Shovels].

7.3 In case the indigenous manufacturer is quoting the same / similar type & model of the equipment, as defined below, as supplied by their foreign collaborator / foreign principal worldwide in the past and the quoted model of indigenous manufacturer has either not been supplied in India or if supplied and commissioned in India, but the same has not completed the required years of performance for provenness as mentioned above, the quoted model will be considered proven if the minimum worldwide population is of [..N..] nos. of quoted model or similar equipment or combination thereof which have been commissioned 3 years prior to the date of opening of tender but not prior to [10 years] from the date of opening of tender and all of them performed satisfactorily (the definition of "satisfactory performance" is given below in Note-i) for a minimum period of three years from the date of commissioning. However, for worldwide population, foreign collaborator's experience of supplying the offered or similar equipment worldwide shall be considered only if the indigenous manufacturer submits notarised copy of their collaboration agreement with the foreign collaborator which should be valid as on the date of opening of the tender and should also remain valid at least upto supply and commissioning of the last equipment covered in the contract. However, the principal manufacturer will confirm to ensure supply of spares & consumables and service support for smooth running of the equipment throughout its life. Further, if any indigenous content is added by the indigenous manufacturer in the

quoted model of the equipment, the foreign collaborator will give an undertaking for successful performance of the equipment with the indigenization carried out by the indigenous manufacturer during lifetime of the equipment.

Minimum quantities 'N' will be indicated in specific tenders. This quantity [N] would be equal to 5 numbers each for Electric Rope & Hydraulic Shovels.

7.4 In case the indigenous manufacturer is quoting the same / similar type & model of the equipment, as defined below, as supplied by their licensor having valid IPR for the same type & model of equipment being offered worldwide in the past and the quoted model of indigenous manufacturer has either not been supplied in India or if supplied and commissioned in India, but the same has not completed the required years of performance for provenness as mentioned above, the quoted model will be considered proven if the minimum worldwide population is of [..N..] nos. of quoted model or similar equipment or combination thereof which have been commissioned 3 years prior to the date of opening of tender but not prior to [10 years] from the date of opening of tender and all of them performed satisfactorily (the definition of "satisfactory performance" is given below in Note-i) for a minimum period of three years from the date of commissioning. However, for worldwide population, the bidder's and licensor's experience of supplying the offered or similar equipment worldwide shall be considered only if the indigenous manufacturer submits notarized copy of their License Agreement with the company having valid IPR for the equipment being offered, which should be valid as on the date of opening of the tender and should also remain valid at least upto supply and commissioning of the last equipment covered in the contract. The bidder and licensor for the equipment being offered will also confirm to ensure supply of spares & consumables and service support for smooth running of the equipment throughout its life. Further, if any indigenous content is added by the indigenous manufacturer in the quoted model of the equipment, the foreign collaborator will give an undertaking for successful performance of the equipment with the indigenization carried out by the indigenous manufacturer during lifetime of the equipment.

Minimum quantities 'N' will be indicated in specific tenders. This quantity [N] would be equal to 5 numbers each for Electric Rope & Hydraulic Shovels.

7.5 Indian Manufacturing entity of foreign manufacturer and bidding as Indigenous manufacturer:

In case the Indian manufacturing entity of foreign manufacturer who has sufficient facility for manufacturing, supply and after sales service of same or similar equipment, as defined below, as supplied by their foreign (principal) manufacturer worldwide in the past and the quoted model of Indian manufacturing entity has either not been supplied in India or if supplied and commissioned in India, the same has not completed the required years of performance for provenness as mentioned above, the quoted model will be considered proven if the minimum worldwide population is of [..N..] nos. of offered model or similar equipment thereof which have been commissioned 3 years prior to the date of opening of tender but not prior to [10 years] from the date of opening of tender and all of them have performed satisfactorily (the definition of "satisfactory performance" is given below in Note-i) for a minimum period of three years from the date of commissioning. However, for worldwide equipment population, the bidder's and principal manufacturer's experience of supplying the quoted or similar equipment worldwide shall be considered only if the Indian manufacturing entity submits notarized copy of valid Legal Agreement/ Collaboration Agreement/ License Agreement/ MOU with foreign (principal) manufacturer for the equipment being offered and a declaration from the Foreign Manufacturer that all related required

Intellectual Property of quoted equipment are accessible by the Indian manufacturing entity. Further, the foreign manufacturer will give an undertaking for successful performance of the equipment to be manufactured by the Indian manufacturing entity during lifetime of the equipment. The bidder and foreign principal manufacturer for the equipment being offered will also confirm to ensure supply of spares & consumables and service support for smooth running of the equipment throughout its life.

Minimum quantities 'N' will be indicated in specific tenders. This quantity [N] would be equal to 5 numbers each for Electric Rope & Hydraulic Shovels.

Note:

i. "Satisfactory Performance" means the supplied equipment must have achieved the guaranteed annual availability, if any, as per the performance guarantee clause of the supply orders/ contracts for a minimum period of three years from the date of commissioning. In case supply orders/ contracts do not have provision for guaranteed annual availability, the bidder will submit satisfactory performance report issued by end users as per benchmark regarding performance of equipment, if any, incorporated in the supply orders/ contracts against which these equipment were supplied. In case, the Performance Report(s) of the End-User(s) is not available, the bidder shall submit self-certification claiming satisfactory performance of the equipment supplied as mentioned at clause-17A (ix).

ii. If the bidder claims provenness of the quoted model based on similar equipment, acceptance criteria for similar equipment shall be as per sub clause-7.7 below.

iii. Performance report of supplies made to India will prevail over those made in foreign countries. The performance of quoted model or similar equipment supplied in foreign countries will be considered only when equipment has either not been supplied in India or if supplied, not completed required years of performance.

iv. For the purpose of provenness of quoted model of the bidders supplied against the Trial Orders placed by CIL and/or its Subsidiaries, the performance of the total quantities of the Trial Order will be considered.

v. Window period is 10 years from the date of opening of tender.

7.6 "Similar Equipment" shall be such equipment, which fulfils the following:

a) Performs almost identical operations as the quoted model.
b) Should be equal to or higher than the tendered capacity.
c) Uses sub-components, sub-systems and major assemblies of substantially similar design & construction to the model quoted – only ratings/ specifications may differ (Lower or Higher). [Individual NITs will have specific provisions as per the nature of the equipment based on inputs to be provided by Technical dept.].

7.7 Acceptance Criteria for Similar Equipment

7.7.1 If the bidder claims provenness of the quoted model based on similar equipment as per sub-clause 7.6 above, then the similar equipment should have performed satisfactorily for a minimum period of three (03) years from the date of commissioning along with satisfactory performance of quoted model for a minimum period of one (01) year from the date of commissioning within the window period as indicated above.

7.7.2 If the bidder claims provenness of the quoted model based on similar equipment as per sub-clause 7.6 above and the similar equipment has performed satisfactorily for a

minimum period of three (03) years from the date of commissioning but quoted model has not worked for a minimum period of one (01) year from the date of commissioning within the window period as indicated above, then the offer may be accepted subject to following conditions:

a) The quoted model should have been designed, manufactured and supplied to the end-user but has not been commissioned or if commissioned, has not completed one year of operation after the commissioning. Documentary evidence for past supply of the quoted model is to be provided along with the offer.

or

The quoted model is an upgraded version of the existing model with improved and the latest drive line / system etc. and has not been manufactured and/or supplied earlier. In such case, the basic model should remain the same. Documentary evidence of past supply of the existing model whose upgraded version has been offered, is to be provided along with the offer.

b) (i) The successful bidder will be allowed to supply the quantity of first lot as indicated in Schedule of Requirement, Section – V, Part I, Table –B;

(ii) The firm shall be required to furnish additional Performance Bank Guarantee of 100% of the total landed value of equipment along with spares & consumables for warranty period for the quantity of first lot. The validity of the additional PBG shall be sufficient to cover the performance of the 1st lot and the period taken for issuance of clearance from the order issuing authority for supply of the remaining quantity.

c) On satisfactory performance of all the equipment of first lot for one year from the date of commissioning [to be certified by the General Manager (Excavation)/ HOD of the subsidiary company], clearance shall be obtained from the order issuing authority for supply of the remaining quantity, if any, as per Schedule of Requirement, Section – V, Part I, Table –B;

d) The additional 100% Performance Bank Guarantee shall be returned only after satisfactory performance of all the equipment supplied in first lot for one year from the date of commissioning.

e) The original 10% PBG for the total contract value will be retained for entire contract period as per PBG clause of NIT.

Note:

In case of unsuccessful performance of the first lot of equipment supplied by the firms who qualify as per above sub clause 7.7.2, the following shall be applicable:

i) The 100% Additional Performance Bank Guarantee for the first lot of equipment shall be encashed by CIL. Consequent upon the encashment of the 100% Bank Guarantee due to non-achievement of stipulated minimum availability percentage, the Supplier shall take back the equipment at no cost to the Purchaser and the contract for the balance quantity shall be cancelled.

ii) The original 10% performance bank guarantee shall be returned to the supplier after recovery of penalty for non-achievement of guaranteed availability in respect of first lot of equipment.

iii) The performance of any individual equipment under this clause shall not be considered for provenness in future tenders of CIL & subsidiaries for any capacity of this type of equipment.

iv) In case of equipment imported under Project Concessional Duty (PCD), the amount of Customs Duty Concession i.e. the differential amount of Normal Customs Duty (NCD) and PCD availed during import shall be recovered from the supplier with interest for refund to the Customs Authorities. The supplier shall deposit such amount to the purchaser on demand else the same shall be recovered from the Security Deposit Bank Guarantee / Performance Bank Guarantee of the supplier.

8. **Cost of Bidding**

The bidder shall bear all costs associated with the preparation and online submission of bid, and Coal India Limited (CIL), hereinafter referred to as "the Purchaser", will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

9. **Content of Bid Documents**

9.1 The Goods required, bidding procedures and Contract terms are prescribed in the Bid Documents. In addition to the Invitation for Bids, the Bid Documents include:

a. Instructions to Bidders (ITB);
b. General Conditions of Contract (GCC);
c. Special Conditions of Contract (SCC);
d. Schedule of Requirements;
e. Technical Specifications;
f. Letter of Bid (LOB);
g. Manufacturer's Authorization Form ;
h. Principal Manufacturer's Declaration Form ;
i. Contract Format;
j. Security Deposit Bank Guarantee Format ;
k. Performance Bank Guarantee Format;
l. Format for Pre-Contract Integrity Pact;
m. Technical Parameter Sheet (TPS) in Excel Sheet in the e-procurement portal;
n. Bill of Quantity (BOQ) in Excel Sheet in the e-procurement portal;
o. Any Other document, information, instruction as specified in the Bid Document and / or specified in the e-procurement portal;

9.2 The bidder is expected to examine all instructions, forms, formats, terms and specifications in the Bid Documents. Failure to furnish all information / documents/ certificates required by the Bid Documents will be at the bidder's risk and it may result in rejection of its bid.

10. **Clarification of Bid Documents**

A prospective bidder may seek clarification online through CIL's e-procurement portal after e-Publication of the NIT. The Purchaser will respond to such requests for clarification of the Bid Documents, which are received not later than 15 (fifteen) days prior to the last date of submission of bid. Purchaser's response shall also be put on the CIL's e-procurement portal, after holding Pre-Bid Conference as described below but 7 (seven) days before the last date for online submission of bid. Purchaser's response (including an explanation of the query but without identifying the source of inquiry) shall also be put on the website of CIL, e-Procurement Portal and CPP Portal. The clarifications shall be of explanatory nature only without altering the basic tenets

of the tender documents.

11. **Pre-Bid Conference**

A Pre-Bid conference will be held at the office of the Purchaser / online on [**.**.**] at [11.00 A.M]. The Bidder's authorised representative who can actively participate and contribute in the conference, is invited to attend the pre-bid conference. Number of persons permitted to attend the Pre-Bid conference shall be limited to a maximum of 2 (Two) persons per bidder. Failure to attend pre-bid conference does not restrict the intending bidders from submitting the bid.

Bidders are requested to send their questions online through CIL's e-procurement portal not later than 15 (fifteen) days prior to the last date of submission of bid. The purpose of the meeting will be to clarify issues and clearing doubts, if any, about the specifications of the items/ equipment and other terms and conditions mentioned in the tender document.

The issues raised by the prospective bidders during the pre-bid conference will be examined by CIL. The clarifications/ modifications, if any, shall be made and communicated to all the intending bidders and shall also be hosted on the websites of the CIL, e-Procurement Portal and CPP Portal. In case there is a modification in the tender document, corrigendum to tender enquiry shall be issued accordingly and also extending the due date and time, if required, for submission/opening of bids suitably.

Bidders are advised that CIL expects the bidders to comply with the tender specifications/conditions which have been frozen after pre-bid conference, and hence non-conforming bids will be rejected straightaway.

12. **Language of Bid**

All correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in English language. Supporting documents and printed literature furnished by the Bidder may be written in another language provided they are accompanied by a certified true translation of the relevant passages in English language in which case, for purposes of interpretation of the bid, the translation shall govern. All such translated documents should bear the signature and stamp of the authorised signatory of the bidder who has signed the LOB, as a token of authentication of the same.

13. **User Portal Agreement**

The bidders will have to accept unconditionally the online user portal agreement which contains the acceptance of all the Terms and Conditions of NIT including Commercial and General Terms & Conditions and other conditions, if any, along with an online undertaking in support of the authenticity of the declarations regarding facts, figures, information and documents furnished in its offer on-line in order to become an eligible bidder and if the same is found to be wrong or misleading at any stage, they will be liable for punitive action.

14. **Methodology for online Submission of Bids**

14.1 The offers are to be submitted on-line through CIL's e-procurement portal in two covers- Cover-I containing 'Techno-Commercial Bid' and Cover-II containing 'Price-

Bid'.

14.2 **Techno-Commercial Bid (Cover-I):** The scanned copies of the following documents will be uploaded in relevant folders in the Techno-Commercial Bid (Cover–I) as mentioned in [Annexure-18], Sample Forms, Sec-VII. **It should be noted that the Cover-I should not contain the price.**

i. **Letter of Bid (LOB)**: The Letter of Bid (LOB) as per the format given at [Annexure-1] will be printed on Bidder's letter head (duly filled in, signed and stamped with the seal of the company) by a person competent and having the "Authority" / "Power of Attorney" to bind the bidder. Scanned copy of such a "Signed & Stamped with the Seal of the Company" LOB along with "Authority"/ "Power of Attorney" are to be uploaded during bid submission in Cover-I. This will be the covering letter of the bidder for his submitted bid. The contents of the "Letter of Bid" uploaded by the bidder must be the same as per the format downloaded from the website and it should not contain any other information. If there is any change in the contents of Letter of Bid uploaded by bidder as compared to the format of Letter of Bid uploaded by the department with NIT document, then the bid may be liable for rejection**.**

Note: The person who has signed Letter of Bid physically should bid online while submitting the offer with his DSC mapped in the name of bidder. In case the person who has signed LOB is not bidding himself and has authorized another person whose DSC is mapped in the name of bidder, to bid online on his behalf, then the further authorization on non-judicial stamp paper duly notarized (as per [Annexure-2]) by the person signing the LOB in favour of person bidding online is required to be uploaded.

ii. **Details of Bidder**: The bidder is required to furnish the details as given in [Annexure-3] as part of its offer. If no information is applicable against any serial number, please mention "Not Applicable".

iii. **Technical:**

(a) Documents as mentioned in Technical Specifications, Section-VI of the bid document:
(b) Technical Documents establishing bidder's eligibility & qualifications as per Clause-17, ITB, Section-II.
(c) Documents towards provenness as per Clause-7, ITB, Section-II.
(d) Complete list of consumable spares and consumables required for first 12 months of warranty period from the date of commissioning of each equipment (**without prices**) as per [Annexure-5 or 8], as applicable, Sample Forms, Section-VII.
(e) Since bidder is required to quote for spares and consumables after warranty period in the clusters of years in the following manner [Will vary as per HEMM for which Technical Department will furnish the schedule depending on the nature and life of the equipment]:
   i. Spares and consumables required from 2nd to … years of operation from the date of commissioning of each equipment;
   ii. Spares and consumables required from … to … years of operation from the date of commissioning of each equipment;
   iii. Spares and consumables required from ----th to ----th years of operation from the date of commissioning of the equipment;
   iv. Spares and consumables required from ----th to ----th years of operation from the date of commissioning of the equipment;

Bidder will upload the following lists for each equipment separately:

a. Combined list of spares and consumables required from 2nd to … years of operation from the date of commissioning of each equipment (**without prices**) separately as per [Annexure-6 or 9], as applicable, Sample Forms, Section-VII.
b. Combined list of spares and consumables required from …. to … years of operation from the date of commissioning of each equipment (**without prices**) separately as per [Annexure-6 or 9], as applicable, Sample Forms, Section-VII.
c. Combined list of spares and consumables required from----th to ----th years of operation from the date of commissioning of each equipment (**without prices**) separately as per [Annexure-6 or 9], as applicable, Sample Forms, Section-VII.
d. Combined list of spares and consumables required from----th to ----th years of operation from the date of commissioning of each equipment (**without prices**) separately as per [Annexure-6 or 9], as applicable, Sample Forms, Section-VII.
e. In case, bidder is quoting for equipment in foreign currency and sourcing some of the items indigenously in INR for fitment in each equipment during commissioning, complete list of such items (**without prices**) is required to be uploaded as per [Annexure-7].

iv. **Commercial:**

a) In case of EMD payment by foreign bidders making direct payment into Coal India's Swift Account and in case of other bidders seeking exemption from submission of EMD, the scanned copy of the UTR or Documentary evidence for exemption, as the case may be, will have to be uploaded by the bidder in the e-procurement portal as per provisions provided therein.
b) Commercial Documents towards bidder's eligibility and qualifications as per Clause-17, ITB, Section-II.
c) Duly signed and stamped Pre-Contract Integrity Pact as per Section-II, ITB, Clause-37 and as per Format given at [Annexure-14], Sample Forms, Section-VII.
d) Lowest Price Certificate as per Clause-9.2, SCC, Section-IV.
e) Copy of the last (latest) purchase order for the tendered / similar item(s) received from any Organization / Ministry / Department of the Govt. of India Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization. This order copy is required to assess reasonableness of offered prices and may be different from the order copies submitted towards provenness criteria.

v. **Technical Parameter Sheet (TPS)**:

Detailed Technical Specifications of **[-----**Name of HEMM**---]** are mentioned in Section-VI. The Technical Parameter Sheet containing the summarised Technical Specifications/ Parameters in Excel Sheet will be available on CIL's e-procurement portal. This is to be downloaded by the bidder who will furnish all the required information on this Excel file. The Bidder is required to put values under the column "BIDDER'S VALUE" in TPS. TPS mentions Clause No. of Technical Specifications and in some cases detailed descriptions of individual component/ system. Details of each clause are mentioned in Technical

Specifications. The details of documents to be submitted in support of values in the TPS are given in [Annexure-18], Sample Forms, Section-VII and Technical Parameter Sheet (TPS). Authenticated and Scanned copy of documents are to be submitted in Five folders named as "Tech Doc 1", "Tech Doc 2", "Tech Doc 3", "Tech Doc 4", "Tech Doc 5", "PROVENNESS DOCs" and "ELIGIBILTY TECHNICAL DOCs" as per check list of [Annexure-18 [Technical]. All the folders must contain at least one (01) document. **NO FOLDER SHOULD BE LEFT BLANK**. All these folders shall be uploaded along with the TPS during Bid submission. Incomplete template or the templates not submitted as per the instructions given, may render your offer liable for rejection.

vi. **Commercial Parameter Sheet (CPS)**:

TPS will also contain a separate sheet named as "Commercial Parameter Sheet" (CPS), which will also be filled-in by the bidder before uploading TPS. All related documents to CPS are to be uploaded by the bidder in "Commercial Eligibility Docs", "LOB Docs", "Commercial Docs" folder.

14.3 **Price Bid (Cover-II):**

The Cover-II has two folders - **BOQ template** and **BOQ 2 folder**. The Price-Bid containing the Bill of Quantity (BOQ) in Excel sheet will be available on CIL's e-procurement portal as BOQ template. This will be downloaded by the bidder who will quote the rates, taxes and other cost elements as provided in the sheet for the offered items. Thereafter, the bidder will upload the same Excel file during bid submission in cover-II. The Price Bid which is incomplete and not submitted as per instruction given above will be rejected. Bidders may refer Clauses–22 & 23 of ITB section for Bid Prices and Bid Currencies.

i. **BOQ template**: This template consists of three sheets- "BoQ 1", "INR Sheet" and "Other_Currency Sheet".

The BoQ 1 sheet is a front sheet and is a multi-currency sheet. This front sheet is a compilation sheet, where the prices quoted by the bidder in foreign currency & INR are compiled for preparation of the comparative chart. The bidder shall only enter its name in full and select the appropriate currency (USD/EURO/JPY/AUD/GBP/INR) in **each** row of "**L**" column of BoQ 1 sheet. The currency selection should be done in **each** row separately. Bidder must select same currency for each row of L column in BoQ 1 sheet (i.e. for each item). **The default currency in the BoQ 1 is USD. If the bidder is quoting in any other currency, it must select the appropriate currency from the drop down menu available in "L" column.**

Note: If the bidder is quoting**:**

a) Any item in foreign currency, they have to select that foreign currency in column "L". Same currency is to be selected for each item.

b) All items ONLY in INR, they should select currency as INR.

c) In combination of INR and foreign currency, the foreign currency should be selected in column "L".

Selection of wrong currency in cells will lead to wrong calculation of price and the bidder shall be solely responsible for that.

The second sheet in BOQ template is an "INR sheet" for quoting price of equipment & spares and consumables in INR. In the "INR sheet", items for which the price is quoted in INR shall be filled in. If the equipment is of indigenous origin, the price of equipment shall be quoted in INR. The total price of all consumables and spares for each cluster of years in INR should be quoted in this sheet separately for each item. All elements of price to be quoted in INR shall be filled in this sheet. The break-up of the total price of all spares & consumables for each cluster of years as per the respective format given in [Annexure-5 to 6] in Section-VII, Sample Forms, should be uploaded in BOQ 2 folder.

The third sheet is "Other_Currency sheet". This sheet is for quoting prices for equipment and spares & consumables in foreign currency. Items for which the prices are quoted in foreign currency shall be filled in this sheet. Elements of prices to be incurred in purchaser's country in INR shall also be quoted in this sheet. The total price of all the spares & consumables in foreign currency for each cluster of years should be quoted in this sheet separately for each item. The break-up of the total price of all spares & consumables for each cluster of years as per the respective format given in [Annexure-8 & 9] in Section-VII, Sample Forms should be uploaded in BOQ 2 folder. Bidders quoting for equipment in foreign currency and sourcing some of the items indigenously for fitment in the equipment during commissioning shall quote the total price of all such items also in this sheet. However, the break-up of indigenously sourced items is required to be uploaded in BOQ 2 folder as per format given in Annexure-7, Section-VII, Sample Forms.

The Total Value of all prices quoted in Other Currency and INR for the full quantity of the Equipment, Spares & Consumables shall reflect in the front sheet in column N and P respectively. The foreign currency component will be multiplied by the exchange rate and added to the INR portion by the portal while preparing the comparative chart. The exchange rate prevailing on the date of price bid opening shall be fed to the portal by the Tender Inviting Authority (TIA).

ii. BOQ 2 folder

The details of prices of individual items of all spares and consumable as per format given in [Annexure-5 to 9, as applicable and Training Charges as per Annexure-10] shall be quoted in Excel sheet and the same shall be uploaded in this folder. It would be the responsibility of the bidder to ensure that the total price for all the spares & consumables for each cluster of years shall tally with the total price of such items quoted in respective sheets (INR sheet/ Other_Currency sheet) of BOQ template & BOQ 2 folder.

Computational errors will be dealt with as per Clause-30, ITB, Section II

14.4 Both the covers – Cover-I 'Techno-Commercial Bid' and Cover-II 'Price Bid' are to be uploaded in the e-procurement portal before the last date and time for submission of online bid.

14.5 Scanned copies (PDF) of the complete documents duly filled in, signed, stamped and notarized (if required) shall be uploaded along with the offer as per tender requirements at relevant spaces / folders in Cover-I. All documents attached should be Self-attested by the authorized signatory of the bidder with the Company's seal; however, some

documents may require attestation by Notary Public as per instructions given in the relevant clauses of the tender document. Bidders are suggested to scan the documents in **100 DPI** for clarity & easy uploading.

14.6 In case the Tenderers submit self-attested copies of registration certificate of NSIC, License from BIS and approval certificate issued by DGMS/ PESO / other Independent Statutory Bodies of Govt. of India along with the tender, such documents should normally be accepted by the Dealing Officer as authentic documents without going for any further verification with the original document. However, if later on the documents submitted by the tenderer are found to be fake/forged, the entire responsibility shall be of the tenderer and for which the purchaser shall take such punitive and other administrative actions against the tenderer as are considered deemed fit.

14.7 The offer should be submitted strictly as per the procedures, terms & conditions laid down in the tender document, failing which the offer may not be considered. Bids having terms and conditions which are in deviation to the tender terms are liable for rejection.

14.8 No offline bid shall be accepted. Offer received through Post, Courier, Fax, Telegram or E-mail will not be considered.

14.9 **Submission of Forged/Tampered Documents**: Based on undertaking furnished by the bidder in its Letter of Bid, certifying the authenticity and statements made in the bid as well as documentary support of such statements submitted with online bid against the tender, CIL, while carrying out evaluation of the offer, shall consider the scanned copies of the documents without any verification with the original. However, CIL reserves the right to verify such documents with the original, if necessary, at a later stage for which the bidder shall have to submit the original documents to CIL on demand. If at any point of time during procurement process or subsequently, any information or document submitted by the bidder, is found to be false/incorrect /forged/tampered in any way, the total responsibility shall lie with the bidder and CIL reserves the full right to take penal action as may be deemed fit including rejection of the offer and / or banning the bidder in CIL for future tenders. The penal action may include termination of contract / forfeiture of all dues including EMD/ Security Deposit / banning of the firm along with all partners of the firm as per provisions of tender document/Purchase Manual of CIL/Provisions of law in force. Further, suitable action may be taken for claiming damages from the bidder.

15. **Period of Validity of Bids**

The bids shall remain valid for a period of 120 days from the day of opening of Techno-Commercial Bid. A bid valid for a shorter period may be rejected by the purchaser.

16. **Earnest Money Deposit (EMD)**

A. Submission of EMD:

I. <u>In Indian Rupees (INR)</u>:

The value of the Earnest Money to be submitted by the tenderer shall be [Rs. ------ Lakhs (Rupees------ Lakhs only)]. The Earnest Money has to be deposited online only within the last date and time for submission of online offer, failing which the online offer will not be considered.

Earnest Money can be deposited by following modes only:

(a) Online fund transfer through Net banking using Payment Gateway available on portal.

(b) NEFT/ RTGS from any Scheduled Bank to the Virtual Pool Account of the Purchaser strictly as per the challan generated by the bidder on e-procurement portal.

No other mode for payment is acceptable for submission of EMD in INR.

The EMD payment through NEFT/RTGS mode should be made well ahead of time to ensure that the EMD amount is transferred to the Purchaser's Bank account before bid submission, otherwise the bidder shall not be able to freeze bid in the portal. It is advised that the payment of EMD should be made at least 2 days prior to due date and time of submission of tender to avoid any complication in submitting online bid before the scheduled last date and time of submission. It is further advised that after successful payment, bidder should confirm receipt of EMD at Purchaser's A/C through "Payment Verification" Link available on the portal. Freezing of bid can be done only after completion of EMD submission process.

If the payment is made by the bidder within the last date and time of bid submission but is not received in Virtual Pool Account of the Purchaser within the specified period due to any reason, the bid will not be accepted by the System/ Purchaser. However, the EMD will be refunded to the bidder's account automatically.

The Bank account used by the bidder for submission of EMD should remain available till the complete processing of the tender for refund of the EMD.

II.In US Dollar (USD):

The value of EMD to be submitted by the foreign bidder shall be USD ….. [USD …]. The amount of EMD has to be credited in Purchaser's Bank Account within the last date and time for submission of online offer, failing which the online offer will not be considered.

Foreign bidders will have to remit the EMD directly to the Purchaser's Bank Account mentioned below:

Account Name: Coal India Limited
A/C no: 10373629359,
Bank: State Bank of India,
Branch: Corporate Accounts Group,
Reliance House, 2nd Floor,
34, Jawaharlal Nehru Road,
Kolkata- 700 071,
India
IFSC Code: SBIN0009998
Swift Code: SBININBB175

While submitting the online bid, the foreign bidder must select "yes" option in EMD Exemption section provided in the portal and upload scanned copy of the UTR/ documentary evidence for such remittance.

The remittance of EMD to the above Bank Account shall be the net remittance excluding all commissions, costs and charges levied by the remitting intermediary foreign and Indian banks. In case of refund of EMD submitted in USD, all charges towards such refund shall be borne by the Purchaser.

Foreign bidder may also submit EMD in INR as explained above in the sub-clause for submission of EMD in INR.

Notes:

a) Bids submitted without full amount of EMD (except for the firms which are specifically exempted from submission of EMD) will be summarily rejected. The net payment credited to the Purchaser's bank account, should not be less than the EMD amount and if it is found to be less than the stipulated amount, the bid will not be accepted.

b) Physical mode of payment, i.e., Banker cheques / Demand drafts etc. are not acceptable.

c) The Purchaser shall not be liable to pay any interest on the amount of Earnest Money Deposit.

B. Exemption from submission of EMD:

State /Central Government Organisations/PSUs, valid NSIC registered firms, valid Ancillary Units of the Purchaser, Micro and Small Enterprises [MSEs] (irrespective of the stores for which they are registered) and Startups are exempted from submission of EMD. Such bidders will have to upload the Self-attested scanned copy of the documents as specified below in support of their claim for exemption of EMD during submission of bid [by selecting "yes" option and uploading scanned copy of the documentary evidence in EMD Exemption section provided in the portal]:

Sl. No.	Category of bidders	Documents required for exemption of EMD
1	State/Central Government Organizations/ PSUs	Self- declaration in their letter-head
2	NSIC registered Firms	Valid and Complete NSIC Registration certificate (irrespective of the stores for which they are registered)
3	Ancillary Units of the Purchaser	Valid and Complete Ancillary status certificate (irrespective of the stores for which they are registered)
4	Micro and Small Enterprises [MSEs]	Self-Attested copy of Udyam Registration Certificate issued by Ministry of MSME. In case of non-availability of Udyam Certificate, Self-Attested copy of any of the following documents issued prior to 30.06.2020 (these documents shall be considered only till 31.03.2021 or the date, as extended by GOI; after which only Udyam Registration Certificate will be considered for MSEs):- Registration certificate (irrespective of the stores for which they are registered) issued by District Industries Centres or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of Micro, Small and Medium Enterprises, Or

		Udyog Aadhaar Memorandum issued by Ministry of MSME, Or Entrepreneurs Memorandum (EM- Part II) signed by DIC.
5	Startups	Recognition certificate from Department for Promotion of Industry and Internal Trade [DPIIT]

C. Refund of EMD:

EMD in Indian Rupees of unsuccessful bidders (except the bidders whose EMD is to be forfeited) will be auto refunded as and when they are declared unsuccessful directly to the account from where it has been received. No claim from the bidders will be entertained for receipt of the refund in any account other than the one from where the money has been received.

In case the tender is cancelled, then EMD of all the participating bidders will be refunded unless it is forfeited by the Purchaser.

If the bidder withdraws its bid online before deadline for submission of tender, then the EMD will be refunded automatically after opening of the tender.

The EMD of the Successful Bidder will be refunded through e-payment on receipt of required Security Deposit from the bidder.

If the refund of EMD is not received by the bidder in the account from which the EMD has been paid due to any technical fault of the portal/system, then it will be paid through e-payment.

For all such e-Payments, bidder will have to submit Mandate Form as per [Annexure-16], Sample Form, Section-VII.

If the successful/unsuccessful foreign bidder has submitted EMD in foreign currency, refund will be made in foreign currency through e-payment. In case of refund of EMD submitted in foreign currency, all charges towards such refund shall be borne by the purchaser.

D. Forfeiture of EMD:

The EMD shall be forfeited in the following cases:

a) If the bidder withdraws or amends, impairs or derogates from the tender in any respect within the period of bid validity offered by the bidder; or

b) In the case of a successful bidder, if the successful bidder:
   i) Fails to sign the contract in accordance with ITB clause-33; or
   ii) Fails to submit the security deposit within **30** days from the date of Notification of Award in accordance with ITB Clause-34 or within the extended date of **60** days with penalty for delay in submission of SD as per Clause-1.4, SCC, Section IV ; or
   iii) Refuses to accept/execute the contract.

17. Documents Establishing Bidder's Eligibility and Qualifications

A. (i) In case equipment manufacturer is quoting against the tender, it has to upload the following documents with the offer:

- Commercial Documents
  a) A write up in respect of its organization along with the documents like Certificate of Incorporation/ Registration etc.
  b) In case of Indigenous manufacturer, copies of GST Registration Certificate and PAN.

- Technical Documents

c) Documentary evidence to establish the fact that they are equipment manufacturer for the offered capacity and type of equipment. Such documentary evidence can be ISO-9001 Certificate, Manufacturing License/ Certificate / Registration issued by the appropriate authorities of the manufacturer's country, Certificate from Chamber of Commerce and Industry of the manufacturer's country etc.

d) Details of After Sales Service Support facilities in India like Depot/ Warehouse for supply of spare parts, Workshop facilities for servicing and repair of assemblies, sub-assemblies and equipment, trained technical manpower and training facilities for providing training to CIL's personnel, etc. as per the minimum criteria mentioned in Clause 5.3, ITB, Section-II for the offered capacity and type of equipment

Details will also include information whether the above facilities are owned by the manufacturer or its authorised Indian Agent/Indian Subsidiary/Indian Office. In case After Sales Service Support Facilities are of its Indian Agent/Indian Office of a Foreign Manufacturer or Indian Subsidiary of a Foreign/Indian Manufacturer, the details as mentioned below in (ii) (b) (c), & (d) / (iii) (a), (c), (d) & (e), as the case may be, shall have to be submitted.

e) In case the bidder does not have the above facilities in India, an undertaking that in the event of placement of order on them, they will establish the above facilities in India within the completion period of warranty of the first equipment commissioned.

(ii) In case Indian Agent is quoting against the tender on behalf of the equipment manufacturer, it has to upload the following documents with the offer:

- Commercial Documents

a) Tender specific Manufacturer's Authorization Form as per [Annexure-4], Sample Forms, Section-VII, signed and stamped by the manufacturer to quote against the CIL Tender, indicating the Tender Reference No. and date.

b) A write up in respect of its organization as well as of its principal along with the documents like Certificate of Incorporation/ Registration etc.

c) Copies of GST Registration Certificate & PAN along with GST Registration Certificate & PAN of Indigenous manufacturer

d) Audited Profit & Loss Accounts / Abridged Profit & Loss Accounts for the last three financial years from the date of tender opening.

- Technical Documents

e) Documentary evidence to establish that its principal is the equipment manufacturer [as indicated above at A.(i)(c)].

f) Details of After Sales Service Support facilities in India like Depot/ Warehouse for supply of spare parts, Workshop facilities for servicing and repair of assemblies, sub-assemblies and equipment, trained technical manpower and training facilities for providing training to CIL's personnel, etc. for the offered capacity and type of equipment as per the minimum criteria mentioned in Clause-5.3, ITB, Section-II. Details will also include information whether the above facilities are

owned by the manufacturer or its authorised Indian Agent/Indian Subsidiary/Indian Office.

g) In case the bidder does not have the above facilities in India, an undertaking that in the event of placement of order on them, they will establish the above facilities in India within the completion period of warranty of the first equipment commissioned.

(iii) In case Indian Office / Indian Subsidiary of a Foreign Manufacturer or Indian Subsidiary of an Indian Manufacturer is quoting against the tender on behalf of the equipment manufacturer, it has to upload the following documents with the offer:

- Commercial Documents

a) A write up in respect of its organization as well as of its holding/parent company along with the documents like Certificate of Incorporation/ Registration etc.

b) Tender specific Manufacturer's Authorization as per [Annexure-4], Sample Forms, Section-VII, signed and stamped by the manufacturer to quote against the CIL Tender, indicating the Tender Reference No. and date.

c) Relevant documents to prove their status as Indian subsidiary of Indian manufacturer / Indian office or Indian subsidiary of the foreign manufacturer.

d) Copies of GST Registration Certificate & PAN of all Indian entities

e) Audited Profit & Loss Accounts / Abridged Profit & Loss Accounts for the last three financial years from the date of tender opening. In case Indian Office or Indian Subsidiary of a Foreign Manufacturer / Indian Subsidiary of an Indian Manufacturer has not completed three financial years from its inception, the Profit & Loss accounts, as available, are to be uploaded.

- Technical Documents

f) Documentary evidence to establish that its holding/parent company is the equipment manufacturer [as indicated above at A.(i)(c)]. Also documents establishing details of manufacturing facility available in India, if any.

g) Details of After Sales Service Support facilities in India like Depot/ Warehouse for supply of spare parts, Workshop facilities for servicing and repair of assemblies, sub-assemblies and equipment, trained technical manpower and training facilities for providing training to CIL's personnel, etc. for the offered capacity and type of equipment as per the minimum criteria mentioned in Clause 5.3, ITB, Section-II. Details will also include information whether the above facilities are owned by the manufacturer or its authorised Indian Agent/Indian Subsidiary/Indian Office.

h) In case the bidder does not have the above facilities in India, an undertaking that in the event of placement of order on them, they will establish the above facilities in India within the completion period of warranty of the first equipment commissioned.

(iv) In case Indian Manufacturing entity of a Foreign Manufacturer is quoting, it has to upload the following documents with the offer:

- Commercial Documents

a) A write up in respect of its organization as well as of its principal foreign

manufacturer along with the documents like Certificate of Incorporation/ Registration etc.

b) Tender specific Principal Foreign Manufacturer's Declaration Form as per [Annexure-4a], Sample Forms, Section-VII, signed and stamped by the manufacturer to quote against the CIL Tender, indicating the Tender Reference No. and date.

c) Relevant documents to prove their status as Indian Manufacturing entity of the foreign manufacturer i.e. Notarized copy of valid legal document/ agreement copy/ Collaboration Agreement/ MOU/ License Agreement executed as per clause 5, ITB, Section-II.

d) The location and address of the factory where the equipment is being manufactured/ local value addition is being made

e) Copies of GST Registration Certificate & PAN of Indian Manufacturing Entity

f) Audited Profit & Loss Accounts / Abridged Profit & Loss Accounts for the last three financial years from the date of tender opening. In case the Indian Manufacturing entity has not completed three financial years from its inception, the Profit & Loss accounts, as available, are to be uploaded.

- Technical Documents

g) Documentary evidence to establish that its principal foreign manufacturer manufactures equipment of the same or similar capacity as the tendered equipment [as indicated above at A.(i)(c)].

h) Documentary evidence establishing that the Indian manufacturing entity has sufficient facility for manufacturing, supply and After Sales Service Support in India for equipment of same or similar capacity as the tendered equipment.

i) Details of After Sales Service Support facilities in India like Depot/ Warehouse for supply of spare parts, Workshop facilities for servicing and repair of assemblies, sub-assemblies and equipment, trained technical manpower and training facilities for providing training to CIL's personnel, etc. for the offered capacity and type of equipment as per the minimum criteria mentioned in Clause-5.3, ITB, Section-II. Details will also include information whether the above facilities are owned by the Indian Manufacturing entity

j) Notarized copy of valid legal agreement/collaboration agreement / license agreement/ MOU with foreign principal manufacturer, duly registered in India

k) An Undertaking by Indian manufacturing entity as well as by foreign principal manufacturer to ensure supply of spares & consumables and service support for smooth running of the equipment throughout its life.

(v) The bidder shall upload scanned copies of supply orders, signed and stamped by itself and the Original Equipment Manufacturer (OEM) and duly notarized, for the offered model and/ or similar equipment (as the case may be) received by them from various customers covering at least for the number of machines against which the bidder has claimed to offer proven equipment as per Clause-7, ITB, Section-II of the NIT. In case the bidder is OEM itself, self-certified and notarized copies of supply orders as mentioned above are required to be submitted. In case, the supply order is not placed by the end user (Customer where the equipment is in use) directly on the OEM but on an intermediary or a series of intermediaries, then documentary evidence establishing the linkage from the end user to the OEM involving all such intermediaries / entities, shall

be provided by the bidder, signed and stamped by itself and the OEM and duly notarized.

(vi) The bidder is required to upload scanned copies of commissioning certificates for the same machine(s) commissioned against supply order(s) indicated at (iv) above, issued by the respective end users, duly signed and notarized for the total numbers of machines against which the bidder has claimed to offer proven equipment as per the Clause-7, ITB of the NIT.

In case, the commissioning certificates of the end user(s) are not available, the bidder shall give a certificate of Original Equipment Manufacturer (OEM) (or Self certificate duly notarized, if the bidder is the OEM), duly signed and stamped, confirming the date of commissioning indicating supply order reference no. & date, model, machine sl. no., date of commissioning (DD/MM/YYYY) and place of commissioning with complete postal address, fax no., e-mail, contact no. and person etc.

(vii) The bidder is required to upload scanned copy of a certificate, duly signed & stamped by the Original Equipment Manufacturer for "Similar Equipment" as defined in Clause-7.4, ITB, Sec II, if bidder has proposed similar equipment for consideration of the provenness of the offered model. In case the bidder is OEM itself, self-certificate as mentioned above is required to be submitted.

(viii) If similar equipment has been proposed for consideration of the provenness of the offered model, the bidder is required to upload the scanned copies of commissioning certificates issued by the respective end user(s), duly signed and notarized for the machines against which the bidder has claimed to be eligible bidder as per NIT in respect of **'Similar Equipment' as defined in clause-7.6, ITB, Sec-II.**

In case the commissioning certificates of the end user(s) are not available, the bidder shall upload a certificate of Original Equipment Manufacturer (OEM), duly signed and stamped, confirming the date of commissioning indicating supply order reference no. date, model, machine sl. no., date of commissioning (DD/MM/YYYY) and place of commissioning with complete postal address, fax no., e-mail, contact no. and person etc. In case the bidder is OEM itself, self-certificates as mentioned above are required to be submitted.

(ix) The bidders shall upload scanned copies of the performance report(s) of the end users for above orders, duly signed and stamped by the OEM also & duly notarized, in respect of offered model and/or similar equipment (as the case may be) supplied by them.

(x) In case, the Performance Report(s) of the End-User(s) is not available, the bidder shall upload a self-certification, duly signed and stamped, confirming that the quoted model or similar equipment have performed satisfactorily for a minimum period of 03 years from the date of commissioning of the equipment and the desired parameters of the performance of the equipment stipulated in the supply orders have been met and no warranty / guarantee claim is pending against the supply orders received and copies enclosed by them along with their offer to establish their provenness for the quoted Model of Equipment.

In case Authorised Indian Agent / Indian office / Indian Subsidiary is submitting the offer on behalf of the Original Equipment Manufacturer or Indian

Manufacturing entity is submitting the offer, self-certification duly signed and stamped by the principal (i.e. Original Equipment Manufacturer) is to be uploaded regarding performance as mentioned above.

(xi) In case bidder is not in a position to submit the past supply order copies due to confidentiality laws of a particular country, a copy of such laws should be uploaded along with the offer for claiming exemption from submitting the supply order/contract copies and in such cases the bidder should upload a Customers List for the quoted Model of Equipment and/or similar equipment (as the case may be) duly signed and stamped by the Original Equipment Manufacturer and duly notarized, clearly indicating the Customer Name & Address, Contract No. & Date, Date of supply and commissioning (DD/MM/YYYY), guaranteed annual availability, if any, as per the performance guarantee clause of the supply order/contract and actual achieved annual availability for minimum 03 years from the date of commissioning (indicating each year availability), for each equipment supplied. In case the bidder is OEM itself, self-certified and duly notarized copies as mentioned above are required to be submitted.

(xii) In case a bidder has a valid legal agreement/collaboration agreement / license agreement/ MOU with an equipment manufacturer, the bidder must upload the documents/ certificates, duly notarized, relating to collaboration with principals, clearly indicating–

a) that the legal agreement/collaboration agreement / license agreement/ MOU is valid on date of tender opening and shall also remain valid at least up to supply and commissioning of equipment.

b) that the principal manufacturer will ensure supply of spares & consumables and service support for smooth running of the equipment during its lifetime.

c) The legal agreement/collaboration agreement / license agreement/ MOU evincing collaboration of the Indian Firm/Company with a foreign partner must be a document registered in India under the provision of the Indian Registration Act 1908, irrespective of the likelihood that the same may not be compulsorily registrable under the provision of Section-17 of the said Act.

(xiii) CIL reserves the right to verify the authenticity of the documents related to Purchase/ Supply orders, Commissioning Certificates, Performance Reports etc. and to obtain performance of equipment directly from the concerned buyers/ customers/ end users of the equipment of the bidder.

B. **The following pre-existing documents shall also be uploaded by the bidder in case of contract with foreign principals involving Indian agents:**

i) Foreign principal's pro-forma invoice or any other authentic document indicating the commission payable to the Indian agent, nature of after sales service to be rendered by the Indian Agent and the precise relationship between the Principal and the Agent and their mutual interest

ii) Copy of the agency agreement, if any, with the foreign principal stating the precise relationship between them and their mutual interest in the business.

18. Deadline for Submission of Bids

i) Online bids must be uploaded by the bidders at CIL's e-Procurement portal by the last date and time as specified in Sec-I, IFB.

ii) The Purchaser may, at its discretion, extend the deadline for the submission of bids in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

iii) In case, 03(three) bids are not received within the stipulated time, the due date of tender shall be extended once by 4 days automatically by the portal. In case no offer is received, tender will be cancelled. The information of cancellation of the tender will be uploaded on the e-procurement portal through corrigendum.

19. Late Bids

No bid will be accepted after the deadline for online submission of bid.

20. Modification and Withdrawal of Bids

i Modification of the submitted bid shall be allowed online only before the deadline of submission of tender and the bidder may modify and resubmit the bid online as many times as he may wish before the deadline of submission of tender.

ii No bid can be modified after the deadline for submission of bids.

iii Bidders may withdraw their bids online within the last date and time of bid submission. However, the bids once withdrawn cannot be resubmitted again.

iv No bid can be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity offered by the Bidder. Withdrawal of a bid during this interval may result in the forfeiture of Bidder's Earnest Money.

21. Purchaser's Right to Accept or Reject any or all Bids

The Purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Purchaser's action. No dispute of any kind can be raised against this right of the Purchaser in any court of law or elsewhere.

22. Bid Prices

22.1 a) The bidders are required to quote their lowest prices for Equipment, Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years in various cluster of years for each equipment, as mentioned in Schedule of Requirement–Section-V.

b) The bidder has to quote for at least 50% of the total tendered quantity as given in Schedule of Requirement–Section-V, otherwise their offer will not be considered. If the 50% quantity comes out to be a fraction, the bidder should quote for the next whole number.

c) In case of indigenous manufacturer quoting for equipment under PCD and NCD, the unit basic rates of equipment may vary. However, in case of foreign manufacturer quoting for equipment under PCD and NCD, the basic rates for equipment will remain the same. The unit basic rates of spares and consumables for both the categories of PCD and NCD will remain the same. If

the unit prices are found to vary, the lowest price will be applicable. In case of INR offer, the basic price will be Ex-works price for equipment and FOR Destination for spares & consumables and in case of foreign currency, it will be CIF price for equipment, spares & consumables.

d) Single contract will be concluded with bidder for both Equipment and Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years.

e) The equipment price shall be inclusive of the total cost towards requirement and services **including training** as mentioned in the Schedule of requirement/ services, Section-V. However, the details in respect of training charges should be indicated for each equipment, as per [Annexure-10], Sample Forms, Section-VII. This break-up shall be used for:

i. Deduction purposes, in case of any default in training as per the given schedule;
ii. Payment purpose in case of additional training imparted as per requirement of the user as mentioned in Part-II, Schedule of requirement/ services, Section-V.

22.2 The Foreign Manufacturer shall quote for supply of Equipment and Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years in various cluster of years for each equipment, in foreign currency. The Foreign Manufacturer may also quote for supply of spares & consumables in Indian Rupees (INR).

22.3 In case the bid is submitted by an authorised Indian Agent/ Indian Office/ Indian Subsidiary of foreign manufacturer, such bidder must quote for equipment in foreign currency on behalf of its principal/ parent/ holding company; and may quote Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years, in INR or in combination of foreign currency and INR. Supply of equipment and Spares & Consumables in foreign currency will be made by foreign manufacturer and payment for the same in foreign currency will be made to the foreign manufacturer. Regarding Spares & Consumables quoted by the authorised Indian Agent/ Indian Office/ Indian Subsidiary of foreign manufacturer in INR, supply of such Spares & Consumables will be made by the authorised Indian Agent/ Indian Office/ Indian Subsidiary of foreign manufacturer and the payment of the same will be made to the authorised Indian Agent/ Indian Office/ Indian Subsidiary. However, in such case a tripartite contract will be concluded with the bidder, who is an authorised Indian agent/ Indian Office/ Indian Subsidiary of foreign manufacturer, alongwith the foreign manufacturer.

22.4 The indigenous manufacturer (Class-I Local Supplier or Class-II Local Supplier) or its authorised Indian Agent/ Indian Subsidiary shall quote the prices for Equipment and Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years in INR for delivery on FOR Destination basis. For the purpose of the contract, the term 'FOR Destination Price' shall mean the sum of Ex-works Price plus Freight up to destination and Transit Insurance charges up to destination. The offer should indicate unit prices, discount, if any, and the total price as per the BOQ and relevant Annexures of Sample Forms, Section-VII.

Under FOR destination Contract, it is the responsibility of the supplier to deliver the goods at the FOR destination site at its own risks and costs. The supplier must contract at its own cost and risk for carriage of goods and insurance to the FOR destination site. CIL has no obligation to the supplier on these accounts. However, CIL will provide the supplier upon request, with necessary information for obtaining insurance.

22.5 In case of equipment of foreign origin to be supplied by the Non-Local Supplier, the imported content and domestic content (if any) should be quoted separately in foreign currency and Indian Rupee (INR) respectively. The payment of foreign currency portion would be made directly to the foreign manufacturer and INR portion, if any, to the Non-Local Supplier. Such bidder may quote Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years, in INR or in combination of foreign currency and INR. Payment for the Spares & Consumables quoted in foreign currency will be made to the foreign manufacturer and payment of Spares & Consumables quoted in INR will be made to the Non-Local Supplier.

22.6 Indigenous manufacturer shall quote for no. of equipment under Normal Customs Duty (NCD) and Project concessional Duty (PCD) as detailed in Sec-V "Schedule of Requirement". They should also indicate the following information, in their offer (in BOQ 2 folder) for equipment with Project Concessional Duty (PCD) only: -

a) Estimated CIF value of the Imported content, if any, both in Indian Rupee and in the specified foreign currency on date of opening of the tender.
b) Rate of Customs Duty, IGST and any other cess/duty as applicable on assessable value (CIF Value) of imported component taken for computation of the prices.
c) Rate of Exchange taken for computation of the prices.

In case of order for equipment under PCD on Indigenous manufacturers, delivery period will be counted from the date of project registration with customs authority. However in case of direct import, delivery shall not be linked with issue of PCD certificate.

22.7 The prices for Equipment and Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years, to be quoted in foreign currency by the Foreign manufacturers, shall be quoted on CIP (Named Place of Destination) basis for delivery at final destination with break-up as per the BOQ and relevant Annexures of Sample Forms, Section-VII and in the following manner: -

A. The Foreign manufacturers shall quote the prices on CIP (Named Place of Destination) basis in any of the foreign currencies mentioned in ITB clause-23 "Bid Currencies".

B. Under CIP (Named Place of Destination) basis contract, it is the responsibility of the supplier to deliver the goods at the named place of destination at its own risks and costs. The supplier must contract at its own cost and risk for carriage of goods and insurance to the named place of destination. CIL has no obligation to the supplier on these accounts. However, CIL will provide the supplier upon request, with necessary information for obtaining insurance.

C. In quoting the price on CIP basis, there shall be no restriction on the choice of the carrier or insurance agency.

D. The elements of marine freight, marine insurance, Port Charges, Clearing &

Forwarding Charges and other incidental charges, inland transportation & insurance charges for delivery upto Named Place of Destination, erection and commissioning charges and all indigenously sourced items required for fitment in the equipment during its commissioning should also be provided by the bidder in its bid as per the BOQ and relevant Annexures of Sample Forms, Section – VII.

E. The Port Charges, Clearing & Forwarding Charges and other incidental charges, inland transportation & insurance charges for delivery upto Named Place of Destination, erection and commissioning and all indigenously sourced items required for fitment in the equipment during its commissioning should be quoted in INR Only. Transportation of goods is to be done through registered common carriers only.

F. The purchaser will pay only Customs Duties applicable to imported goods. All activities to clear goods through Customs and transport to Named Place of Destination will be undertaken by the supplier at its cost. Payment in respect of Custom Duties properly levied on the CIF value of the imported goods shall be made in INR in the following manner :

(i) The supplier shall submit Check List with appropriate Customs Code (H. S. Code) along with a copy each of the supplier's invoice, freight bill and insurance bill well in advance to the C&F Deptt. of CIL,

(ii) After examination, the C&F Deptt. of CIL will inform the supplier the correctness of leviable customs duties for preparation of Bill of Entry,

(iii) Thereafter, the supplier will submit the final Bill of Entry to the C&F Deptt., CIL for payment of Customs Duties to Customs Authorities,

(iv) C&F Deptt., CIL will pay Customs Duty directly to Commissioner, Customs by Account Payee Cheque / Electronic Fund Transfer,

(v) After payment of customs duty by CIL, the supplier will arrange clearance of goods at Port. After final clearance of goods at Port, the supplier will submit duplicate Bill of Entry to HOD, C&F Deptt. of CIL.

G. The Foreign manufacturer must indicate the name & address of its agent in India. It should also indicate the commission payable to them and the specific services rendered by them. The Indian Agency commission will be payable only on FOB prices of goods and it should be quoted as a percentage of the FOB price. In case, the foreign manufacturer does not have any Indian Agent, it should be clearly mentioned in the bid. The amount of agency commission payable to Indian Agent should not exceed 5% or what is specified in agency agreement, whichever is lower.

H. The manufacturer/ tenderer shall also submit a certificate that no agent/ middleman/ liaisoning agent or any entity in any name other than the disclosed authorized Indian agent is involved in the process of procurement of goods and services and subsequently, if at any stage, it is found that it has given a false certificate, it shall be liable for penal action as per provisions of the NIT / Purchase Manual of CIL.

22.7 Prices quoted by all the bidders for equipment and Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/10/11/14/21/24]

years, shall remain firm till supply of these items.

22.8 Bids submitted with conditional price quotations shall be rejected.

22.9 Discounts offered, if any, should be clearly indicated as Trade Discount, Quantity Discount etc. Conditional Discounts shall not be taken into account for the purpose of determination of ranking.

23. Bid Currencies

The prices shall be quoted in the following currencies:

i) **For Indigenous Manufacturer**: For Goods and Services that the bidder will supply from within the Purchaser's country, the prices shall be quoted in INR.

ii) **For Foreign Manufacturer:** For Goods and Services that the bidder will supply from outside the Purchaser's country, the prices shall be quoted in only one of the following currencies US Dollar, EURO, GB Pound, Japanese Yen and Australian Dollar. The chosen foreign currency should be the same for the equipment, spares and consumables.

Foreign manufacturers can quote for Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/10/11/14/21/24] years, in INR also.

iii) The Port Charges, Clearing & Forwarding Charges and all other incidental charges, inland transportation & insurance for delivery upto Named Place of Destination and erection and commissioning charges should be quoted in INR only.

24. Opening of Bids by Purchaser

i. The Techno-Commercial Bids (Cover-I) will be decrypted on-line and will be opened on the pre-scheduled date and time of tender opening.

ii. Price-Bid (Cover-II) will be opened after evaluation of Cover-I. The Cover-II of only the techno-commercially acceptable bidders (qualified bidders against Cover-I) shall be decrypted and opened on the scheduled date & time for which separate intimation will be given to the techno-commercially acceptable bidders through the e-procurement portal.

iii. Upon opening of the Price Bid, system will allow for Auto Financial opening whereby no comparative statement will be generated but Reverse Auction Platform named "Auction BOQ" will be created. Reverse Auction process will follow as mentioned in clause 28, ITB.

25. Techno-Commercial Evaluation of Tender

a) Based on the response to TPS templates, the portal will initially evaluate eligible bidders. Subsequently, the bidder's response in TPS will be scrutinized/ verified and evaluated by the concerned departments with the documents uploaded by the bidders to determine whether they are in conformity with the tender document.

b) Any bid which has not been submitted with the requisite amount of EMD/ Exemption document will not be considered for further evaluation.

c) During evaluation, shortfall/ confirmatory documents, if required, will be sought from the bidders. For this purpose, maximum two chances, first of 7x 24 hours

duration and second of 5 x 24 hours duration shall be given to the bidders to upload these clarification / shortfall / confirmatory documents.

d) Purchaser will determine the Techno-commercial acceptability of the bidders on the basis of the original offer and subsequent clarifications/confirmation, if any. For the purpose of this determination, a techno-commercially acceptable bid is one, which conforms to all the terms and conditions of the Bid Document and the requirements of all commercial terms and mandatory technical specifications without deviations, exceptions, objections, conditionality or reservations.

e) After techno-commercial evaluation of bids, price bids of the techno-commercially acceptable bidders will be opened in the manner described in Clause-24 above. The Techno-commercial bid that is not meeting the NIT requirement will be rejected by the Purchaser.

26. Shortfall/ Confirmatory Documents

During evaluation and comparison of bids, the purchaser may ask the bidder for clarifications on the bid. The request for clarification shall be communicated to the bidder via the purchaser's portal, asking the bidder to respond by a specified date. If the tenderer does not comply or respond by the specified date, his tender will be liable to be rejected. No change in prices or substance of the bid shall be sought, offered or permitted. No post-bid clarification at the initiative of the bidder shall be entertained.

The shortfall information/documents shall be sought only in case of historical documents which pre-existed at the time of the tender opening and which have not undergone change since then. (Example: if the Permanent Account Number, registration with sales tax/ VAT/ GST has been asked to be submitted and the tenderer has not provided them, these documents may be asked for with a target date as above).

So far as the submission of documents is concerned with regard to qualification criteria, after submission of the tender, only related shortfall documents shall be asked for and considered. For example, if the bidder has submitted a supply order without its linkage order(s) /completion / performance certificate, the linkage order(s) / certificate related to that supply order can be asked for and considered. However, no new supply order shall be asked for so as to qualify the bidder.

These documents are to be uploaded within the specified time period. The above documents will be specified on-line under the link '**Upload Shortfall / Confirmatory Documents',** after scrutiny of bids, indicating the start date and end date giving 7x24 hours duration for online submission by bidder. The bidders will get this information on their personalised dashboard under "Upload Shortfall/ Confirmatory Document/Information" link. Additionally, information shall also be sent by system generated email and SMS, but it will be the bidder's responsibility to check the updated status/ information on their personalised dashboard at least once daily after opening of bid. If further clarifications/shortfall documents are required, another chance will be given through confirmatory link, keeping a time frame of 5x24 hours, for on-line submission of documents.

The Purchaser reserves the right to verify any of the documents uploaded by the bidder at any stage. All communication will be on e-mail and SMS basis and no separate communication will be made in this regard. Non-receipt of e-mail and SMS will not be accepted as a reason of non-submission of documents within prescribed time.

27. Conversion to Single Currency

a) To facilitate evaluation and comparison of the bids, all bid prices expressed in various foreign currencies will be converted in Indian Rupee.

b) The applicable Exchange rate prevailing on the price-bid opening date shall be fed to the system by the Purchaser after opening of Price Bid. The applicable rate will be "Bill Selling Rate" of State Bank of India. Otherwise the reference rate as available from RBI website will be taken.

28. Reverse Auction

Reverse auction process shall be as under:

(a) Upon opening of the Price Bid, system will allow for Auto Financial opening whereby no comparative statement will be generated but Reverse Auction platform named "Auction BOQ" will be created.

(b) Reverse Auction will be initiated normally within 2 hours after opening of price bids and a multi auction template (in excel format) will be uploaded.

(c) The multi auction template will display only the item-wise L-1 price received, decrement value, starting and end time and exchange rate(s) used for conversion of foreign currency into Indian Rupees, prevailing on the price-bid opening date. The number and name of bidders participating in the Reverse Auction shall not be made visible to other bidders.

(d) The L-1 Total Bid Price as defined in clause-29(E) (c), ITB of the NIT of each item will be "Start Bid Price" for respective item of the NIT.

(e) There will be no participation fees for e-Reverse auction.

(f) The decrement value will be 0.5% of the start bid price with minimum of Rs.1.00, as the system does not have a provision of taking amounts less than Rs.1.00 as decrement value. The reduction shall have to be made as per decrement value or in multiple thereof. In order to have ease of submission of reverse auction bid by the bidders, the decrement value will be rounded off to nearest value as under:

i) For decrement values up to Rs.10/-, rounding off will be made to nearest rupee.
ii) For decrement values from Rs.11/- to Rs.100/-, rounding off will be made to nearest 10.
iii) For decrement value from Rs.101/- to Rs.1,000/-, rounding off will be made to nearest 100.
iv) For decrement value from Rs.1,001/- to Rs.10, 000/-, rounding off will be made to nearest 1,000;
v) For decrement value from Rs.10,001/- to Rs.1,00,000/-, rounding off will be made to nearest 10,000 ;
vi) For decrement value from Rs.1, 00, 001/- to Rs.10,00,000/-, rounding off will be made to nearest 1,00,000 and so on…

(g) The maximum seal percentage in one go shall be fixed as 2% over and above the normal decrement of 0.5%, i.e., 2.5% of Start Bid price or the last quoted price during reverse auction, whichever is lower.

This shall be worked out as under:

$$DV_1 = (DV + \frac{2}{100} x \text{ L1})$$

where DV= Decrement Value (fixed) as indicated in NIT
DV_1= Maximum range of decrement (Bidders can offer reduction in multiples of DV within this range)

L1= Start Bid Price or Current Lowest Price as displayed during reverse auction

If the start bid price is Rs.21000 and decrement value is Rs.100, the maximum seal percentage will be 2% of 21000 i.e. Rs.420 and upper range of reduction shall be Rs.520 (100+420). However, as reduction has to be in multiples of decrement value, maximum reduction that can be offered by the bidder will be Rs.500 only and hence, first reduced bid in reverse auction cannot be below Rs.20500.

In the above scenario, the seal percentage for 2nd bid will be 2% of 20500 i.e. Rs.410 and the upper range of reduction shall be Rs.510 (100+410). Thus maximum reduction that can be offered will again be Rs.500 only in multiples of Rs.100 (decrement value).

(h) Initial period of reverse auction will be two hours. There will be auto extensions of time every time by 30 minutes in case of any reduction recorded in the last 30 minutes. The reverse auction will come to a close only when there is no further reduction recorded in the last 30 minutes slot.

In case of multiple-items, auto extension will take place only for the item(s) for which any reduction has been recorded in last thirty minutes. For rest of the items for which no reduction has been recorded in the last thirty minutes, the Reverse Auction will close.

(i) Item-wise H-l bid (the highest bid) will be eliminated during price bid opening, if more than four techno-commercially acceptable bids are available and H-1 bidder (the bidder who has quoted the highest net landed cost/price) will not be able to participate in the Reverse Auction for that item. If two bidders have quoted the same H-l net landed cost/price, the bidder who had submitted/ frozen the bid later, shall be rejected and will not be able to participate in Reverse Auction. However, H-l elimination will not be applicable to the preferential category of bidder like MSEs, Make In India, Ancillaries, Domestically Manufactured Electronic Products (DMEP) and other preferential category of bidders notified by Government of India from time to time.

Note: If a bidder has quoted under preferential category and the Tender Inviting Authority (TIA) has rejected the status of the bidder's preferential category due to non-compliance to tender requirement, then the bidder will not be treated as preferential category bidder and during price bid opening its bid will be treated as non- preferential / preferential category bidder and will be evaluated accordingly.

(j) System protects bid and bidder information till auction gets over and displays current L-1 price to the bidder in auction hall.

(k) The log details of the entire reverse auction process will be generated by the system once the process of reverse auction is completed.

(l) Break-up of price: The LI bidder after the reverse auction has to upload the breakup of the Total Bid Price online through confirmatory link. The detailed breakup of offered Total Bid Price, uploaded by the bidder shall be considered and order, if placed, shall be with the same breakup of prices. While giving the break up, the bidder will not be allowed to increase the initial quoted rate and quantity of any component. The composite price may be either equal to the price offered in reverse auction or less. The LI bidder after reverse auction will be responsible to ensure

that the Total Bid Price as per the breakup of prices provided by him after the reverse auction and the LI Total Bid Price offered by him in the reverse auction is the same or less, otherwise it may be treated as withdrawal of offer and will attract penal action. The bidder will also have to consider same rate of taxes and duties as quoted while submitting the e-price bid.

In case of any discrepancy in the final BoQ price after reverse auction and the revised break-up submitted after reverse auction, the lower of the two prices shall be considered and award of contract and payment shall be made accordingly. In case of non-acceptance of this provision by the bidder, it will be treated as withdrawal of offer and EMD will be forfeited accordingly.

(m) If a bidder does not submit his bid in the Reverse Auction, the price quoted by him in the price bid shall be considered as the valid price of that bidder. The status of the bidder (L-1, L-2 etc.) shall be evaluated considering either the bid price submitted in Reverse auction or the Price quoted in the price-bid, whichever is lower.

(n) Since, reverse auction is a sequel to e-tender, the process of finalizing the tender upon completion of reverse auction will be the same as the tender process without reverse auction.

(o) The Auction bid history shall reflect only the total bid price.

(p) Only the chronologically last bid submitted by the bidder till the end of the auction shall be considered as the valid price bid of that bidder and acceptance of the same by CIL will form a binding contract between CIL and the bidder for entering into a contract. Any bid submitted earlier during reverse auction process prior to submission of his last bid will not be considered as the valid price bid.

(q) Purchase Preference: If any of the short listed bidders is eligible for purchase preference as per Government policy, such bidders would get opportunity to match the L-l prices concluded after reverse auction, if their final prices in Reverse Auction fall within the permitted percentage and they are otherwise eligible. This will also be applicable to MSEs, Make In India, Ancillaries, Domestically Manufactured Electronic Products (DMEP) and other preferential category of bidders notified by Government of India from time to time.

(r) Conversion Rate: The exchange rate prevailing on the price bid opening date, shall be fed to the system by the TIA during opening of the price bid. The applicable rate will be “Bill Selling Rate” of State Bank of India. Otherwise the reference rate as available from RBI website will be taken.

(s) Server time shall be the basis of Start time & Closing time for bidding and shall be binding for all. This would be visible to all concerned.

(t) On expiry of the closing of the auction, the bid history showing all the last valid bids offered along with name of the bidders shall be published in the portal. All bidders shall have the facility to see and get a print of the same for their record.

(u) If the lowest price received during reverse auction is found unreasonable or it is unacceptable on ground of being too high or too low compared with estimated price, LPP etc., the management reserves right to seek justification of the price from lowest bidder. If the price is not considered reasonable, management may not accept such bid and go for another tender process.

(v) In case of disruption of service at the service provider’s end while the RAP is online, due to any technical snag or otherwise attributable to the system failure at the server end, the RAP process will start all over again. In such a situation, the last recorded lowest price of prematurely ended RAP, will be the ‘Start Bid’ price for

the restarted RAP. The prices quoted in the prematurely ended RAP will be binding on all the bidders for consideration, if the restarted RAP does not trigger within the stipulated time.

(w) Disruption and restarting of RAP shall be intimated to all the bidders through system/SMS/e-mail through e-procurement portal. All the time stipulations of normal RAP will be applicable to the restarted RAP.

29. Evaluation and Comparison of the Bids

Evaluation of bids will be made in the following manner **(No. of clusters will be 2 for equipment with post warranty contract period of upto 10 years, 3 for equipment with post warranty contract period of above 10 years but upto 15 years and 4 for equipment with post warranty contract period of above 15 years)** :-

A) Evaluation of Indigenous Offer for Equipment in Indian Rupees

a) The bidder will fill their prices in Indian Rupees and on FOR Destination basis with the break-up for Ex-Works Price of the equipment, Freight and Transit Insurance Charges upto destination, applicable rate of GST on FOR destination price, Erection and commissioning charges and applicable rate of GST on Erection and commissioning charges for an equipment in BOQ-"INR sheet".

b) The rate of GST entered by the bidder in BOQ-"INR sheet" shall be legally applicable rate of GST at the time of submission of bid.

c) Landed Price of each equipment shall be arrived at after adding all elements of prices quoted in BOQ-"INR sheet".

d) Net Landed Price of each equipment will be arrived at after deducting Input Tax Credit for GST from Landed Price of each equipment.

B) Evaluation of INR Offer for Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years:-

a) The bidder shall quote the FOR destination prices of all spares and consumables (unit prices multiplied with the quantity of items) in Indian Rupees as under:

(i) For Consumable Spares and Consumables for 12 months of warranty period, the bidder shall quote FOR destination price of all spares and consumables (unit prices multiplied with the quantity of items) for an equipment.

(ii) For Spares & Consumables for a period of [9/14/21/24] **years,** the bidder shall quote FOR destination price of all spares and consumables (unit prices multiplied with the quantity of items) for an equipment as under:

1. Total price of Spares and consumables required from 2nd to .. years operation from the date of commissioning of the equipment
2. Total price of Spares and consumables required from … to … years of operation from the date of commissioning of the equipment.
3. Total Price of spares and consumables required from----th to ----th years of operation from the date of commissioning of the equipment.
4. Total Price of spares and consumables required from----th to ----th years of operation from the date of commissioning of the equipment

(The break-up of prices and quantities of individual items of spares and consumables for each cluster of years shall be uploaded in BOQ 2 as per the format as given in [Annexures 5 to 6, as applicable]).

b) Total Landed price of all spares and consumables for each cluster of years mentioned above will be arrived at by adding total GST amount on FOR Destination price of all spares and consumables (unit prices multiplied with the quantity of items) separately for each cluster of years mentioned above. The total amount of GST shall be mentioned in BOQ template and legally applicable rates of **GST for each item** of spares & consumables shall be clearly mentioned in BOQ 2.

c) Total Net Landed Price of all spares and consumables for each equipment will be determined after deducting Input Tax Credit on total GST amount as follows:-

Total Net Landed Price = [Net Landed Price for all Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment arrived at after deducting Input Tax Credit on GST] plus (+) [Net Landed Price for all Spares & Consumables from 2nd to .. years of operation from the date of commissioning of the equipment arrived at after deducting Input Tax Credit on GST] plus(+) [Net Landed Price for all Spares & Consumables from .. to ... years of operation from the date of commissioning of the equipment arrived at after deducting Input Tax Credit on GST] plus(+) [Net Landed Price for all Spares & Consumables from .. to ... years of operation from the date of commissioning of the equipment arrived at after deducting Input Tax Credit on GST plus] (+) [Net Landed Price for all Spares & Consumables from …..th to ….th years of operation from the date of commissioning of the equipment arrived at after deducting Input Tax Credit on GST]. Further, Net Present value of Net Landed Price for all spares & consumables will be worked out for evaluation purpose as per NPV rates indicated in the BOQ separately as under:

i. Average annual rate for NPV from 2nd to … years of operation from the date of commissioning of the equipment
ii. Average annual rate for NPV from … to … years of operation from the date of commissioning of the equipment
iii. Average annual rate for NPV from …. to …. years of operation from the date of commissioning of the equipment
iv. Average annual rate for NPV from …. to …. years of operation from the date of commissioning of the equipment

The contract value shall be arrived at after multiplying the Total Net landed Price (without applying NPV and deducting input tax credit) with quantity offered by the bidder.

C) Evaluation of Import offer for Equipment in Foreign Currency

In case of import offer, the bidder will be required to fill in prices on CIP (Named Place of Destination) basis as per the break-up given in the format in BOQ- "Other_ Currency sheet"

The Net Landed Price for each equipment will be arrived at in Indian Rupees in the following manner:-

1) The FOB Price of the equipment, Marine freight and Marine insurance charges will be added together to work out at CIF Price of the equipment.

2) Basic Customs Duty (BCD) on assessable value (which will be CIF value), Social Welfare Surcharge (at the applicable rate on BCD) and IGST (on assessable value plus BCD plus Social Welfare Surcharge), will then be added on the CIF price. The GST on Marine freight and GST on Indian Agency Commission shall be auto-calculated and will be added to total price with customs duty to arrive at total foreign currency component. 100% Input Tax Credit shall be considered on GST and IGST. Therefore, the total component of GST and IGST shall be deducted from the total foreign currency component to arrive at "Net foreign currency" component which will be carried over to the front sheet after multiplying by unit quantity of equipment under head "Total Value of all Prices quoted in Other Currency for Equipment, Spares & Consumables" in BoQ1 sheet.

3) The Port charges, clearing & forwarding charges and other incidental charges, Inland Transportation & Insurance charges for delivery upto Named Place of Destination, Erection and Commissioning charges and all indigenously sourced items required for fitment in the equipment during its commissioning shall be quoted by the bidder in INR along with applicable GST rate in the appropriate columns. All these components shall be added together to arrive at total INR component. 100% Input tax credit shall be considered on GST. Hence, the GST component shall be deducted from the total INR component to arrive at "Net INR component" which will be carried over to the front sheet under head "Total Value of all Prices quoted in INR for Equipment, Spares & Consumables" in BoQ1 sheet.

4) The Net Foreign currency component so arrived at shall be converted to INR at the exchange rate prevailing on the date of opening of Price Bid which will then be added to the INR component to arrive at Net Landed Price of the equipment.

D) Evaluation of offer for Supply of Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years , in Foreign Currency

i In case of import offer for all Consumable Spares and Consumables for 12 months of warranty period, the bidder shall quote Total FOB Price, Total Marine freight and Total Marine insurance charges for all Consumable Spares and Consumables (unit prices multiplied by the quantity of items) required for each equipment. For Spares and Consumables for a period of [9/10/11/14/21/24] years, the bidder shall quote total FOB Price, total Marine freight and total Marine insurance charges of all Spares and Consumables (unit prices multiplied by the quantity of items) required for each equipment as under:

1. Total price of Spares and consumables required from 2nd to … years operation from the date of commissioning of the equipment
2. Total price of Spares and consumables required from … to … years of operation from the date of commissioning of the equipment.
3. Total Price of spares and consumables required from----th to ----th years of operation from the date of commissioning of the equipment.

4. Total Price of spares and consumables required from----th to ----th years of operation from the date of commissioning of the equipment.

These will be added to arrive at the CIF Price which is also assessable value. (The break-up of prices of individual items of Spares and Consumables for each above mentioned cluster of years shall be uploaded in BOQ 2 as per the format given in Annexures [8 to 9]).

ii The bidder shall quote total Port charges, clearing & forwarding charges and other incidental charges and Inland Transportation & Insurance charges for delivery upto Named Place of Destination charges in INR.

iii Basic Customs Duty (BCD) on assessable value (which will be CIF value), Social Welfare Surcharge (at the applicable rate on BCD) and IGST (on assessable value plus BCD plus Social Welfare Surcharge), will then be added on the CIF price. The GST on Marine freight and GST on Indian Agency Commission shall be auto-calculated based on the rate quoted by the bidder and will be added to total price with customs duty to arrive at total foreign currency component. 100% Input tax credit shall be considered on GST and IGST. Therefore, the total component of GST and IGST shall be deducted from the total foreign currency component to arrive at "Net foreign currency" component of all spares & consumables.

iv For Consumable Spares and Consumables for 12 months of warranty period, the "Net foreign currency" component will be carried over to the front sheet under head "Total Value of all Prices quoted in Other Currency for Equipment, Spares & Consumables" in BoQ 1 sheet. For Spares & Consumables for [9/14/21/24] years after warranty period, the "Net foreign currency" component will be carried over to the front sheet under head "Total Value of all Prices quoted in Other Currency for Equipment, Spares & Consumables" in BoQ 1 sheet after multiplying by the discounting factors to arrive at Net Present value of these spares & consumables for evaluation purpose.

v The Port charges, clearing & forwarding charges and other incidental charges, Inland Transportation & Insurance charges for delivery upto Final Place of Destination in INR along with applicable GST shall be added together to arrive at total INR component. 100% Input tax credit shall be considered on GST. Hence the GST component shall be deducted from the total INR component to arrive at "Net INR component".

vi The "Net INR component" for Consumable Spares and Consumables for 12 months of warranty period will be carried over to the front sheet under head "Total Value of all Prices quoted in INR for Equipment, Spares & Consumables" in BoQ1 sheet.

vii The "Net INR" component for Spares & Consumables for [9/14/21/24] years after warranty period, will be carried over to the front sheet under head "Total Value of all Prices quoted in INR for Equipment, Spares & Consumables" in BoQ1 sheet after multiplying by the discounting factors to arrive at Net Present value of these spares & consumables for evaluation purpose.

viii The Net Foreign currency component so arrived as above shall be converted to INR at the exchange rate prevailing on the date of opening of Price Bid which will then added to the INR component arrived as above to arrive at Net landed price for all Consumable Spares and Consumables for 12 months of warranty period and thereafter all Spares & Consumables for a period of [9/14/21/24] years.

Note: 1. The L-1 status shall be decided by deducing the Input Tax credit on GST. Therefore the bidders are to ensure timely and correct filing of their returns. In case of any lapse on the part of the bidder resulting in CIL being denied of the Input Tax Credit by tax authorities, equivalent amount shall be recovered from the bills of suppliers.

2. Statutory Variation: If there is any statutory change in GST within contractual delivery period, the same shall be admissible and will be paid at actual based on documentary evidence. However, no upward revision in GST beyond original delivery period shall be admissible unless the delay is due to any lapse on the part of the purchaser.

3. It shall be responsibility of the bidder to indicate the correct rate of Customs Duty applicable to their goods. If it becomes necessary for CIL to pay higher rate of Customs Tariff due to wrong quoting of customs rate by the bidder, the same shall be deducted from supplier's bill. However, if the higher rate is due to any statutory change, the same shall be borne by CIL.

E) Evaluation of Composite Offer of Equipment and Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the Equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years for each equipment.

a) Evaluation will be made on individual equipment basis based on the prices of Equipment and Consumable Spares and Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years.

b) Evaluation will also take into account Net Present Value (NPV) of Spares & Consumables for a period of [9/14/21/24] years, to be supplied after warranty period of 12 months from the date of commissioning of the equipment. The NPV shall be calculated on average annual rate basis The discounting factors based on average annual rate to work out NPV of Spares and Consumables will be indicated in the BOQ.as under :

i. Average annual rate for NPV from 2nd to … years of operation from the date of commissioning of the equipment.
ii. Average annual rate for NPV from … to … years of operation from the date of commissioning of the equipment
iii. Average annual rate for NPV from …. to …. years of operation from the date of commissioning of the equipment
iv. Average annual rate for NPV from …. to …. years of operation from the date of commissioning of the equipment

c) The Total Bid Price of each bidder for each equipment will be calculated in the following manner: -

Total Bid Price= Net Landed Price of the equipment **plus** (+) Net Landed Price of Consumable Spares & Consumables for warranty period of 12 months from the date of commissioning of the equipment **plus** (+) NPV of Net Landed Price

for all Spares & Consumables from 2nd to … years of operation from the date of commissioning of the equipment] **plus** (+) NPV of Net Landed Price for all Spares & Consumables from … to …years of operation from the date of commissioning of the equipment **plus** (+) NPV of Net Landed Price for all Spares & Consumables from …th to …th years of operation from the date of commissioning of the equipment **plus** (+) NPV of Net Landed Price for all Spares & Consumables from …th to …th years of operation from the date of commissioning of the equipment..

The Total Net Landed Prices will be arrived at after deducting applicable input tax credit as explained on pre-pages.

d) The ranking of the techno- commercially acceptable bids shall be made on the basis of the Total Bid Price of each equipment as above and contract will be awarded accordingly subject to acceptance of the price by the Purchaser and also subject to Purchase Preference to preferential bidders.

30. Computational Errors

Computational errors will be rectified on the following basis:

1. In case of any discrepancy in the total price of all spares & consumables quoted in INR Sheet/Other_Currency Sheet in BOQ template and summation of individual items quoted in BOQ 2 Folder, the prices in BOQ template and BOQ 2 folder (if not participated in reverse auction) / revised Price Break-Up submitted after participation in reverse auction, shall be considered for evaluation, while award of contract and payment shall be made at lower of the two prices.

2. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and the quantity, the unit price shall prevail, and the total price shall be corrected. If there is a mistake in addition / subtraction of the total of unit prices, the unit price shall prevail and the total price shall be corrected.

3. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

4. If there is a discrepancy between words and figures, the amount in words shall prevail.

Such types of discrepancies in the offer shall be conveyed to the bidder asking it to respond by a target date and if the bidder does not agree to Purchaser's observation, the tender is liable to be rejected and EMD will be forfeited.

31. Contacting the Purchaser

31.1 Subject to ITB Clause-26, no bidder shall contact the Purchaser on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded.

31.2 Any effort by a bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison or contract award may result in the rejection of the bidder's bid.

32 **Notification of Award**

32.1 The purchaser will notify the successful bidder that its bid has been accepted.

32.2 The Notification of Award shall be binding on the bidder until a formal contract is prepared and signed.

32.3 Delivery Schedule as indicated in Schedule of Requirement, Section-V, shall reckon from the date of Notification of Award.

33. Signing of Contract

33.1 Within 15 (Fifteen) days from the date after the Purchaser notifies the successful Bidder(s) that its bid has been accepted, the Purchaser will send the successful Bidder(s) the draft copy of the agreements to be signed between the Parties.

33.2 Within Fifteen (15) days of receipt of the draft copy of the agreements, the successful Bidder(s) shall sign the agreement/Contract with the Purchaser.

34. Security Deposit

34.1 Within 30 days of the notification of award from the purchaser, the successful bidder shall furnish the Security Deposit in accordance with the conditions of the contract, in the Security Deposit format provided in the Bid Document [Annexure-12, Sample Forms, Sec-VII]. In case the SDBG is not submitted within 30 days from the date of NoA, a penalty equivalent to 0.5% (half percent) of SD amount for delay of each week or part thereof (period of delay is to be calculated from the 31st day from the date of NoA to the date of receipt of full SD shall be levied and paid by the successful tenderer along with the SDBG.

34.2 Failure of the successful bidders to comply above requirement of Security Deposit and requirement of ITB clause-33 and 34.1 shall constitute sufficient ground for the annulment of the award and forfeiture of the Earnest Money Deposit.

35. Code of Integrity for Public Procurement (CIPP):

35.1 CIL, its subsidiaries as well as bidders, contractors, suppliers and consultants under contract with CIL or its subsidiaries shall observe the highest standard of ethics during the procurement and/or execution of such contracts.

In pursuit of this policy, for the purpose of this provision, the terms set forth below are defined as follows:

(i). "Corrupt Practice" means making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;

(ii). "Fraudulent Practice" means any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in the execution of a contract;

(iii). "Anti-competitive Practice" means any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act 2002, between two or more bidders, with or without the knowledge of the Purchaser, that may impair the transparency,

fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;

(iv). "Coercive Practice" means harming or threatening to harm, directly or indirectly, at any stage, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

(v). "Conflict of interest" means participation by a bidding firm or any of its affiliates that are either involved in the consultancy contract to which this procurement is linked; or if they are part of more than one bid in the procurement; or if the bidding firm or their personnel have relationships or financial or business transactions with any official of Procuring Entity who are directly or indirectly related to tender or execution process of contract; or improper use of information obtained by the (prospective) bidder from the Procuring Entity with an intent to gain unfair advantage in the procurement process or for personal gain; and

(vi). "Obstructive practice" means materially impede the Procuring Entity's investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the Procuring Entity's rights of audit or access to information.

35.2 Procuring authorities, as well as bidders, suppliers, contractors and consultants, are obliged under Code of Integrity for Public Procurement to suo moto proactively declare any conflicts of interest (coming under the definition mentioned above – pre-existing or as and as soon as these arise at any stage) in any procurement process or execution of contract. Any bidder must declare any previous transgressions of such a code of integrity with any entity, in any country, during the last three years, or of being debarred by any other Procuring Entity. Failure to do so would amount to violation of this code of integrity.

35.3 Punitive Provisions: A particular violation of code of integrity may span more than one of the above mentioned unethical practices. Without prejudice to and in addition to the rights of the Procuring Entity to other penal provisions as per the bid documents or contract, if the Procuring Entity comes to a conclusion that a (prospective) bidder/supplier, directly or through an agent, has violated this code of integrity in competing for the contract or in executing a contract, the Procuring Entity may take appropriate measures including one or more of the following:

i) if his bids are under consideration in any procurement

   a) Forfeiture or encashment of bid security;
   b) Calling off of any pre-contract negotiations; and
   c) Rejection and exclusion of the bidder from the procurement process.

ii) if a contract has already been awarded

a) Cancellation of the relevant contract and recovery of compensation for loss incurred by the Procuring Entity;
b) Forfeiture or encashment of any other security or bond relating to the procurement;
c) Recovery of payments including advance payments, if any, made by the Procuring Entity along with interest thereon at the prevailing rate. The due amount may be recovered from the bills of the supplier against any existing/future contract(s) with CIL and/or any of its subsidiaries.

iii) Provisions in addition to above:

a) Removal from the list of registered suppliers and banning/debarment of the bidder from participation in future procurements of the Procuring Entity for a period not less than one year;
b) In case of anti-competitive practices, information for further processing may be filed under the signature of a General Manager level officer, with the Competition Commission of India; and
c) Initiation of suitable disciplinary or criminal proceedings against any individual or staff found responsible.

35.4 Furthermore, Bidders shall be aware of the provision stated in GCC Clause-21.2 of the General Conditions of Contract.

36. Banning of business

36.1 The banning of business shall be considered in the following cases:

(i) If the Directors, Proprietors, Employees, Partners or any Representative of the firm is/are found guilty of offences involving any security consideration including loyalty to the State, in connection with business dealings with CIL or its Subsidiaries.

(ii) If the Director, Proprietor or Partner, Manager or any Representative of the firm is convicted by a court of law

a). under the Prevention of Corruption Act, 1988 or under the Indian Penal Code or any other law for the time being in force for offences involving moral turpitude in business dealings; or

b). under the Indian Penal Code or any other law for the time being in force, for causing any loss of life or property or causing a threat to public health as part of execution of a public procurement contract.

(iii) Violation / transgression of Integrity Pact.

(iv) If there are strong reasons to believe that the Directors, Proprietors, Managers or any Representative of the firm has/have been guilty of or found to be indulging in malpractices/ unethical commercial practices such as bribery, corruption, fraud, substitution of tenders, interpolation, etc.

(v) If there is strong justification for believing that the proprietor or employee or representative of the firm has been guilty of evasion or habitual default in payment of any tax levied by law; etc.

(vi) Wilful suppression of facts or furnishing of wrong information, false declaration or manipulated or forged documents by the firm or using any other illegal/unfair means.

(vii) Drawing double payment or submitting invoice for double payment for the supply of same materials or carrying out the same job/work.

(viii) Supplying defective materials and failure to replace the defective materials even after reasonable extension is given to the firm for rectification/ replacement of the defective materials or carrying out defective/poor quality job, not conforming to specifications of the contract and failure to rectify it within the stipulated time.

(ix) If the firm repeatedly and/or habitually resorts to revision of price and terms of offer within the validity period of the tender and/or submission of ambiguous and misleading offers, post tender modifications in order to undermine the decision-making process.

(x) Failure to pay legitimate dues to CIL/Subsidiary Companies including dues arising out of Risk Purchase and when CIL and/or its Subsidiary Companies are satisfied that this is not due to any reasonable dispute which would attract proceedings in arbitration or a Court of Law.

(xi) Continued and repeated failure to meet contractual obligations.

(xii) Canvassing and lobbying to get undue favour from the Company.

(xiii) Formation of price cartels with other suppliers/contractors with a view to artificially hiking the prices.

(xiv) Any other misdeed, which may cause financial loss or commercial disadvantage to the Company.

36.2 The period of banning shall be decided based on the gravity of the offence and the quantum of loss suffered by CIL or the Subsidiary Companies. In case of banning under sub-clauses (i), (ii) & (iii) above, the banning period shall not be exceeding three years. In case banning under other sub-clauses, banning period shall not exceed two years.

37. Pre-Contract Integrity Pact

The bidders will have to upload along with their offer, the duly filled-in, signed and stamped (on each page) Pre-Contract Integrity Pact on the plain paper as per format enclosed as [Annexure-14], Sample Forms, Sec-VII, failing which their offer may not be considered. The tenderer should sign and stamp all pages of the Pre-Contract Integrity Pact with name and designation of the signatory and witnesses at the last page of the Integrity Pact. The LOB and Pre-Contract Integrity pact should be signed by the same person.

In terms of the Integrity Pact, the Independent External Monitor(s) (IEMs) nominated for this tender are as follows:

Sr. No.	Name of IEM	Address	E-mail ID	Mobile No.

In case of any grievance, bidders may approach Independent External Monitor(s) (IEMs).

38. Purchase Preference under 'Make in India' Policy

Under 'Make in India' policy of Government of India, Purchase Preference will be given to eligible bidders as per Public Procurement (Preference to Make in India), Order 2017 issued vide order No. P-45021/2/2017-B.E.-II dated 15th June 2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019, 04.06.2020 and 16.09.2020) of Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry.

38.1 In terms of the above said policy, purchase preference shall be given to 'Class-I Local Supplier' in the following manner:

i Among all qualified bids, the lowest bid will be termed as L-1. If L-1 is 'Class-I Local Supplier', the contract for full quantity will be awarded to L-1.

ii If L-1 bid is not from a 'Class-I Local Supplier', 50% of the order quantity shall be awarded to L-1. Thereafter, the lowest bidder among the 'Class-I Local Supplier' will be invited to match the L-1 price for the remaining 50% quantity subject to the Class-I Local Supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such 'Class-I Local Supplier' subject to matching the L-1 price. In case such lowest eligible 'Class-I Local Supplier' fails to match the L-1 price or accepts less than the offered quantity, the next higher 'Class-I Local Supplier' within the margin of purchase preference shall be invited to match the L-1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I Local Suppliers, than such balance quantity may also be ordered on the L-1 bidder.

iii 'Class-II Local Supplier' will not get purchase preference.

Note: The "order quantity" under Clause-38.1 (ii) refers to the quantity mentioned in tender.

38.2 The definitions of 'Class-I Local Supplier', 'Class-II Local Supplier', 'Non-Local Supplier', 'Local Content' and 'Margin of Purchase Preference' are as follows:-

a. 'Class-I Local Supplier' means a supplier, whose goods and/or services offered for procurement, has local content equal to or more than 50%.

b. 'Class-II Local Supplier' means a supplier, whose goods and / or services, offered for procurement, has 20% or more local content but less than 50%.

c. Non - Local Supplier' means a supplier, whose goods and / or services, offered for procurement, has local content less than 20%.

d. 'Local Content' means the amount of value added in India which shall be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of

the total value, in percent.

e. 'Margin of Purchase Preference' means the maximum extent to which the price quoted by a "Class-I Local Supplier" may be above the L1 for the purpose of purchase preference. The margin of purchase preference shall be 20%.

38.3 Verification of local content :

a. The 'Class-I local supplier'/ 'Class-II local supplier' shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content. The certificate shall also indicate details of the location(s) at which the local value addition is made.

b. Nodal Ministry /CIL may constitute committees with internal and external experts for independent verification of self-declarations / auditor's / accountant's certificates on random basis and in the case of complaints.

c. Nodal Ministry / CIL may prescribe fees for such complaints.

d. False declarations will attract banning of business of the bidder or its successor(s) for a period upto two years in line with clause 35.3 of ITB, along with such other actions as may be permissible under law.

e. A supplier who has been debarred by any procuring entity for violation of above Order shall not be eligible for preference under this Order for procurement by any other procuring entity for the duration of debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities.

38.4 **Reciprocity Clause [Clause 10 (d) of PPP-MII Order 2017]** :

a) When a Nodal Ministry / Department identifies that Indian suppliers of an item are not allowed to participate and / or to compete in procurement by any foreign government, due to restrictive tender conditions which have direct or indirect effect of banning Indian companies such as registration in the procuring country, execution of projects of specific value in the procuring country etc., it shall provide such details to procuring entity under their administrative control for appropriate reciprocal action.

b) Entities of countries which have been identified by the Nodal ministry / department as not allowing Indian Companies to participate in their Government procurement for any item related to that Nodal Ministry shall not be allowed to participate in Government procurement in India for all items related to that Nodal Ministry / department except for the list of items published by the Ministry / Department permitting their participation.

c) The term "entity" of a country shall have the same meaning as under the FDI policy of DPIIT as amended from time to time.

d) Further, vide OM No. P-45021/52/2019-PP(BE-II) dated 13.03.2020 of the

Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry, GOI, the following has been communicated with regard to Clause-10(d) of PPP-MII Order 2017:

i. It is clarified that if a country does not procure globally particular sector, Indian manufacturers are being excluded in that particular country and the reciprocity clause as per clause 10(d) of PPP-MII Order 2017 may be invoked.

ii. Clause-10(d) of the PPP-MII Order 2017 may be invoked when restrictive practices are employed which have a direct or indirect effect of barring Indian companies from participating in Public Procurement of any country. These include not allowing participation of foreign companies in general and Indian companies in specific in Public Procurement; insistence on restrictive conditions such as registration in the procuring country / execution of projects of specific value in the procuring country etc.

39. Purchase Preference to Micro & Small Enterprises (MSEs)

a. Minimum 25% of the tender quantity will be procured from MSEs in case they are participating in the tender, provided their quoted price is up to 115% of price of the L1 eligible bidder and they agree to match the L-1 price.

b. Further, out of this 25%, sub-targets of 4% may be procured from MSEs owned by the SC/ST entrepreneurs and 3% from women owned MSEs.

c. Classification of Micro and Small Enterprise is as under:
   i) Micro Enterprise -Enterprise where the investment in plant and machinery does not exceed Rupees one crore and turnover does not exceed five crore rupees;
   ii) Small Enterprise- Enterprise where the investment in plant and machinery does not exceed ten crore rupees and turnover does not exceed fifty crore rupees.

d. MSEs shall submit Self-Attested copy of Udyam Registration Certificate issued by Ministry of MSME. In case of non-availability of Udyam Certificate, Self-Attested copy of any of the following documents issued prior to 30.06.2020 (these documents shall be considered only till 31.03.2021 or the date, as extended by GOI; after which only Udyam Registration Certificate will be considered for MSEs):-

   Registration certificate (irrespective of the stores for which they are registered) issued by District Industries Centres or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of Micro, Small and Medium Enterprises, Or Udyog Aadhaar Memorandum issued by Ministry of MSME, Or Entrepreneurs Memorandum (EM- Part II) signed by DIC.

It is necessary for MSEs to upload self-attested copy of any of the above documents in the folder “Commercial Docs”, failing which such bidders will not get the benefits as per Public Procurement Policy for Micro and Small Enterprise (MSEs) Order, 2012.

The benefits to MSEs under Public Procurement Policy for Micro and Small Enterprise (MSEs) Order, 2012 shall be restricted to the unit(s) /plant(s) which are appearing in the registration certificate issued by the above mentioned registering authority. For other units/ plants, no benefits under the above policy shall be given. Further, the bidder

will submit an undertaking in the "Commercial Docs" that it will supply the offered items to CIL from the unit/ plant for which it will avail benefits under the Public Procurement Policy for Micro and Small Enterprise (MSEs) Order, 2012.

e. The MSEs owned by SC/ST are classified as under:
   i) In case of proprietary MSE, proprietor(s) shall be SC/ST
   ii) In case of partnership MSE, the SC/ST partners shall be holding at least 51% shares in the unit
   iii) In case of Public Limited Companies, at least 51% share shall be held by SC/ST entrepreneurs at any given point of time.
   iv) In case of Private Limited Companies, at least 51% share shall be held by SC/ST promotors.

f. In case MSE is an enterprise wholly owned by Scheduled Caste (SC) or Scheduled Tribe (ST), then SC or ST will have to submit a copy of necessary caste certificate issued by State Authority as per Law, duly notarized by Public Notary, in the folder "Commercial Docs".

40. Startups

Startups means an entity, incorporated or registered in India not prior to ten years, with annual turnover not exceeding Rs. 100 crores in any preceding financial year, working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation. Provided that such entity is not formed by splitting up, or reconstruction of a business already in existence. Provided also that an entity shall cease to be a startup if its turnover for the previous financial years has exceeded Rs. 100 crores or it has completed 10 years from the date of incorporation/ registration. In order to avail benefits provided to Startups, the entity is to be recognized by DPIIT [GSR No. 127(E) dated 19.02.2019 of Gazette of India].

41. Relaxation for MSEs and Startups

a) The prior experience and turnover criteria are not applicable for Startups & MSEs and no documents regarding provenness will be required to be submitted by these categories of bidders if they submit documents/ certificate towards quality, assurance and capability from some authority like MSME, NSIC, etc.

b) However, if these bidders have submitted documents to prove the Startup/MSE status for the tendered item but have not submitted documents/certificate towards quality, assurance and capability from some authority like MSME, NSIC, etc., if needed, CIL may assess the techno-commercial capability of these bidders to manufacture and deliver goods as per the prescribed quality and technical specification before awarding contract to them. For this purpose, these bidders have to submit the details of plant & machinery, quality control arrangements, etc., in a 'Proforma for Equipment and Quality Control' (as per Annexure-17) provided in tender document along with their offer for verification of their technical capability for which if required, a techno-commercial team of CIL may visit the manufacturing unit of the bidder.

c) In case there is deficiency in technical capability of the firm, the same will be communicated to them for improvement in the quality of their product for future tenders

alongwith the observation that their offer cannot be considered for relaxation against the tender in question.

d) If favorable technical capability reports obtained earlier on such firms for supply of the item in question as per the required specification is available, these may be considered for granting relaxation to the criteria of prior experience and prior turnover provided date of such reports is not more than one year from the date of opening of tender.

e) If bidders have submitted documents to prove the Startup/MSE status for the tendered item and their products are ISI marked/DGMS approved/Proven in CIL or its Subsidiary companies/Proven product of the ancillary unit of a Subsidiary Company of CIL, they will be required to submit the following applicable related documents, duly notarized, for relaxation from the criteria of prior experience and prior turnover:

- A Valid BIS Marking License for the quoted items

OR

- Rate contract issued by CIL/ its subsidiary for the quoted items

OR

- A Valid DGMS Approval certificate for the quoted items

OR

- Proven Ancillary certificate issued by Subsidiary Companies for the quoted items

The document(s)/certificate(s) furnished by the bidders for ISI markings or DGMS approval for any relaxation should be valid on the date of tender opening and a copy of such document(s) / certificate (s) valid on the date of supply, duly notarized, must accompany their offer.

42. Conflict of Interest among Bidders/ Agents

A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. The bidder found to have a conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:

(a) they have controlling partner (s) in common; or
(b) they receive or have received any direct or indirect subsidy/financial stake from any of them; or
(c) they have the same legal representative/agent for purposes of this bid; or
(d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another bidder; or
(e) bidder participates in more than one Bid in the bidding process. Participation by a bidder in more than one bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/sub- assembly/assemblies from one bidding manufacturer in more than one bid.
(f) in cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one agent/dealer. There can be only one bid from the following:
1. The principal manufacturer directly or through one Indian agent on his behalf; and

2. Indian/foreign agent on behalf of only one principal.

(g) a Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid;

(h) in case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/common business/ management units in same/similar line of business.

Section III – General Conditions of Contract (GCC)

General Conditions of Contract

1. Definitions

In the interpretation of the contract and the general and special conditions governing it, unless the context otherwise requires, the following terms shall be interpreted as indicated below:

a) "The Contract" means the agreement entered into between the Purchaser and the Supplier including all attachments and appendices thereto and all documents incorporated by reference therein including Invitation to tender, Instructions to tenderers, Acceptance of tender, Particulars and the General and Special Conditions specified in the acceptance of tender;

b) "Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;

c) "Goods" means all of the equipment, plant, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract;

d) "Services" means those Services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental Services, such as installation, commissioning, provision of technical assistance, training and other such obligations of the Supplier covered under the Contract;

e) "GCC" means the Conditions of Contract contained in this section;

f) "SCC" means the Special Conditions of Contract;

g) "Purchaser" means the organisation purchasing goods and services, i.e., Coal India Limited or its subsidiaries or areas falling under various subsidiaries of Coal India Limited;

h) "Purchaser's country" is India;

i) "Supplier/Contractor" means the individual, firm or company with whom the contract has been concluded for supplying the Goods and Services under the Contract. The Supplier/Contractor shall be deemed to include its successors (approved by the purchaser), representatives, heirs, executors, administrators and permitted;

j) "CIL'' means Coal India Limited or the Subsidiary Company of CIL or areas falling under various subsidiaries of CIL where Goods are deployed/ used;

k) "Year" means the Calendar Year.

l) "Chairman" means the Chairman of Coal India Limited.

m) "Chairman-cum-Managing Director" means Chairman-cum-Managing Director of any of the Subsidiary Companies of Coal India Limited, presently Central Coalfields Limited, Eastern Coalfields Limited, Western Coalfields Limited, Bharat Coking Coal Limited, Central Mine Planning & Design Institute Limited, South Eastern Coalfields Limited, Northern Coalfields Limited and Mahanadi Coalfields Limited.

n) "Drawing" means the drawing and plans specified in or annexed to the schedule or specifications.

o) "Inspector" means any person nominated by or on behalf of the purchaser to inspect supplies, stores or work under the contract or his duly authorized agent.

p) "Progress Officer" means any person nominated by or on behalf of the Purchaser to visit supplier's works to ascertain position of deliveries of Goods ordered.

q) "Materials" shall mean anything used in the manufacture or fabrication of the stores.

r) "Stores" means the goods specified in the Supply Order or schedule which the supplier/contractor has agreed to supply under contract.

s) "Test" means such test or tests as are prescribed by the specifications or considered necessary by the Inspector or any agency acting under direction of the Inspector.

t) "Site" mean the place or places named in the "Supply Order" or such other place or places at which any work has to be carried out as may be approved by the purchaser.

u) Words denoting the persons shall include any company or association or body of individuals whether incorporated or not.

v) Words in singular include the plural and vice-versa.

w) Words denoting the masculine gender shall be taken to include the feminine gender.

x) "Writing" shall include any manuscript, typewritten or printed statement under or over signature or seal as the case may be.

y) "Unit" and "Quantity" means the unit and quantity specified in the schedule.

z) "Purchase Order" or "Supply Order" or "Order" or "Contract" means an order for supply of stores and includes an order for performance. The terms "Supply Order", "Purchase Order", "Order" and "Contract" are interchangeable.

aa) "Particulars" shall mean the following:

i) Specifications;
ii) Drawing;
iii) Sealed pattern denoting a pattern sealed and signed by the Inspector;
iv) Certified or sealed sample denoting a copy of the sealed pattern or sample sealed by the purchaser for guidance of the Inspector;
v) Trade pattern denoting a standard of the ISI or other standardising authority or Coal India Ltd. and/ or any of its subsidiary companies or a general standard of the industry and obtainable in the open market;
vi) Proprietary make denoting the product of an individual manufacturer;
vii) Any other details governing the construction, manufacture and/or supply as existing in the contract.

bb) Terms and expressions not defined herein shall have the meanings assigned to them in the Indian Sale of Goods Act, 1930 or the Indian Contract, 1872 or the General Clauses Act, 1897, as amended, as the case may be.

2. Application

These Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

3. Standards

The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications. Such standards shall be the latest issued by the concerned institution.

4. Use of Contract Documents and Information

4.1. The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

4.2. The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in sub-clause 4.1 above, except for purposes of performing the Contract.

4.3. Any document, other than the Contract itself, enumerated in sub-clause 4.1 above shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

5. Patent Rights

The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in the Purchaser's country.

6. Security Deposit

6.1. The successful tenderers will have to submit Security Deposit for the 10% value of the total landed value of the contract including all taxes, duties and other costs and charges, without considering Input Tax Credit.

6.2. The Security Deposit shall be in the form of a Bank Demand Draft or in the form of a Bank Guarantee in the prescribed format from a RBI Scheduled Bank in purchaser's country (on a non-judicial stamp paper) within 15 days from date of notification of award or placement of order.

6.3. The Security Deposit shall be in the same currency(ies) in which contract is to be signed/ issued. In case

of multi-currency contract, separate Security Deposit Bank Guarantee (SDBG) in respective currency for required value as above shall be submitted.

6.4. In case of equipment, SDBG shall not be individual equipment wise. However, multiple Bank Guarantees for Security Deposit shall be permissible provided value of all the SDBGs totals to 10% of the contract value, and all are submitted simultaneously within the specified time schedule and all of them are in the same prescribed format of SDBG without linking to any particular equipment.

6.5. The SDBG shall remain valid up to 3 months after completion of supplies and acceptance of materials by the consignee in case of supply contracts and in case of contracts for equipment involving installation and commissioning, 3 months after the supply and commissioning of all the equipment covered in the contract.

6.6. If the successful tenderer fails to deposit the security deposit within 15 (fifteen) days from date of notification of award/ placement of order, another opportunity may be given to them for submission of Security Deposit within next 15 days. If the successful tenderer still fails to deposit the security deposit within the extended period but executes the supplies within scheduled delivery period, the submission of Security Deposit may be waived, as the purpose of submission of SD is fulfilled.

If the Supplier fails to deposit the SD within the extended period and no supplies are made, the order shall be cancelled and the case shall be processed to order elsewhere at firm's risk and cost. Moreover, the firm's performance is to be kept recorded for future dealings with them. Further, if during execution of the contract, the firm fails to extend the Bank Guarantee for Security Deposit, suitably as required, the same shall be recorded as unsatisfactory performance for future dealings apart from taking any other penal action as may be deemed fit by CIL.

6.7. In cases where the successful tenderer did not submit the security deposit even within the extended period for SD submission but has supplied the materials either in full or in part after the extended period for SD submission, the SD may be deducted from the first bill or in case of insufficient amount from subsequent bill(s) of the supplier till the full SD amount is deducted. Further, a penalty equivalent to 0.5% (half percent) of SD amount for delay of each week or part thereof (period of delay is to be calculated from the 31st day from the date of notification of award/placement of order to the date of receipt of full SD/deduction of full SD) shall be levied subject to a maximum of 10% of the contract value.

6.8. Security Deposit will be released with the approval of HOD of MM Department/ Area GM within 30 days after completion of supplies and acceptance of material by the consignee in case of supply contractor after successful commissioning and on receipt of confirmation of Performance Bank Guarantee(s) for all the equipment covered in the contract in case of contracts for equipment and all those items/ goods involving installation and commissioning and PBG.

6.9. Security Deposit may be converted into Performance Bank Guarantee (PBG) wherever PBG is required at the option of the supplier. At the time of conversion of security money into PBG, it should be ensured that the amount of PBG should not be less than 10% of landed value of order. Wherever Security Deposit is converted into PBG, the operation of such SDBG/ Performance BG shall be guided by Performance Bank Guarantee Clause.

6.10. All Central/State Government Organization/PSUs shall be exempted from submission of Security Deposit. OEM/OES shall also be exempted from submission of Security Deposit in case of procurement of Spare Parts for equipment against Single Tender Enquiry/Open/Limited Tenders.

6.11. Submission of Security Deposit is exempted for the contracts having value upto Rs.2 lakhs.

6.12. The SDBG will be submitted Through Structured Financial Management System (SFMS).

7. Performance Bank Guarantee

7.1. Wherever applicable, the successful bidder shall be required to furnish a Performance Guarantee equivalent to 10% value of the total landed value of the contract including all taxes, duties and other costs and charges, without considering Input Tax Credit.

7.2. The Performance Guarantee shall be in the form of a Bank Guarantee issued by a RBI scheduled bank in India in the prescribed format on a non-judicial stamp paper.

7.3. The Performance Bank Guarantee (PBG) shall be in the same currency (ies) in which contract has been signed. In case of multi-currency contract, separate PBG in respective currency for required value shall be submitted.

7.4. If the contract is for procurement of equipment, the PBG (s) may be submitted equipment wise also. For this purpose, the value of each equipment will be worked out by dividing the total value of contract for a particular item of NIT, worked out as per provisions contained in clause-7 above, by the number of equipment ordered for that particular item of the NIT.

7.5. The PBG (s) shall remain valid till 3 months after the completion of warranty period.

7.6. The PBG shall be submitted sufficiently in advance (say 3-4 weeks) to enable its verification from the issuing bank, before submission of the invoice for 80% payment of the particular goods/ equipment(s).

7.7. The release of the Performance Bank guarantee(s) after above indicated period, shall be subject to satisfactory performance of the equipment/ items during the warranty period and fulfillment of contractual obligations failing which, action for further extension or encashment of PBG, as deemed suitable shall be taken. The Performance Bank Guarantee shall be released after expiry of validity period if no claim is pending, with the approval of the concerned HOD (MM)/ Area GM.

7.8. In case of procurement of equipment, if the successful tenderer which does not have the After Sales Service Support facilities in India like Depot/ Warehouse for supply of spare parts, Workshop facilities for servicing and repair of assemblies, sub-assemblies and equipment, availability of trained technical manpower etc., training facilities for providing training to CIL's personnel, wherever required, additional Performance Bank Guarantee for the 30% value of the total landed value of the contract including all taxes, duties and other costs and charges shall have to be submitted. This 30% PBG will be released after establishment of After Sales Service Support facilities in India subject to confirmation of the same by concerned Head of Technical Department. However, the supplier shall have to submit PBG for 10% of the total contract value to be kept valid for the remaining period of the contract plus 3 months processing period before release of 30% PBG. This 10% PBG will be released after satisfactory performance of all equipment/ items and fulfillment of contractual obligations including warranty obligations.

7.9. The PBG will be submitted through Structured Financial Management System (SFMS).

8. Inspections and Tests

8.1. The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract Specifications at no extra cost to the Purchaser. Generally, the Goods shall be of the best quality and workmanship and comply with the contract or supply order in all respect. The Technical Specifications shall specify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing, of the identity of the inspector(s). The Purchaser reserves the right, at the Purchaser's cost, to depute its own inspector(s) and/or to engage any other third party inspecting agency, to conduct inspections and tests pursuant to the Contract. Sufficient time, atleast 30 days in advance will be given for inspection.

8.2. The inspections and tests may be conducted on the premises of the Supplier, at point of delivery and/or at the Goods' final destination. If conducted on the premises of the Supplier, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser. However, any drawing and proprietary information provided for this purpose shall remain in control of the supplier. The inspector shall have full and free access at the supplier's works for the purpose of carrying out inspection. The Inspector shall have the right to put all the stores or materials forming part of the same or any part thereof to such tests as he may think fit and proper. The supplier shall not be entitled to object, on any ground whatsoever, to the method of testing adopted by the Inspector. Unless otherwise provided for in the contract, all stores/materials expended in test will be to supplier's account. In the event of Goods found acceptable by the Inspector during inspection, he shall furnish the supplier with necessary copies of Inspection notes for attaching to the supplier's bill.

8.3. Should any inspected or tested Goods fail to conform to the Specifications, including acceptance tests and periodic tests to verify guaranteed performance, the Purchaser may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet Specification requirements free of cost to the Purchaser within thirty days of such rejection. Replaced or altered goods shall be subjected to repeated inspection or tests to demonstrate conformity with the Specifications. In the event that replacement or alteration is not done within thirty day period as aforesaid, or, replaced or altered goods fail to demonstrate conformity with the Specifications in repeated inspections or tests as aforesaid, the Purchaser reserves the right to terminate the Contract in part or in whole and the Supplier shall repay forthwith to the Purchaser all monies paid including all costs incurred in the inspection and tests, in respect of Goods and Services associated therewith, for which the termination is applicable and, subsequently remove the same from the Purchaser's Site at the Supplier's cost.

8.4. Any Goods rejected at a place other than the premises of the supplier, shall be removed by the supplier within 14 days of the date of receipt of intimation of such rejection. The Inspector may call upon the supplier to remove what he considers to be dangerous, infected or perishable Goods, within 48 hours of the receipt of such intimation. The rejected stores shall under all circumstances lie at the risk of the supplier from the moment of rejection and if such stores are not removed by the supplier within the above mentioned period, the Inspector/Purchaser may either return the same to the supplier at the supplier's risk and cost (a public tariff rate) by such mode of transport as the Purchaser or Inspector may select or dispose of such stores at the supplier's risk on his account and retain in such portion of the proceeds as may be necessary to cover any expense incurred in connection with such disposal. The purchaser shall also be entitled to recover handling and storage charges for the period during which the rejected stores are not removed.

8.5. The Purchaser's right to inspect, test and where necessary, reject the Goods after the Goods' arrival in the Purchaser's country shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods' shipment from the Supplier's premises.

8.6. Nothing in this clause shall in any way relieve the Supplier of any warranty or other obligations under this Contract.

9. Packing and Marking

9.1. The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2. All packing cases, containers, packing and other similar materials shall be supplied free by the Supplier and these shall not be returned unless otherwise specified in the Contract/Purchase order.

9.3. The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the contract and in any subsequent instructions ordered by the Purchaser. Packages will be stamped with identification marks both outside the packages as well as on the contents inside. Packages containing articles liable to be broken by rough handling like glass or machinery made of cast iron will be marked with cautionary works like 'Fragile' 'Handle with care'.

9.4. The marking of the Goods must comply with the requirements of the law relating to Merchandise Mark, in force in India.

9.5. Packing instructions: The Supplier will be required to make separate packages for each consignee. Each package will be marked on three sides with proper paint with the following:

i. Project;
ii. Contract No;
iii. Country of origin of Goods;
iv. Supplier's name;
v. Packing list Reference Number;
vi. The gross weight, net weight and cubic measurement;
vii. Consignee Name and Address;

9.6. A complete list of contents in each package called the packing list will be prepared and one copy of the packing list shall be inserted inside the package.

10. Delivery and Documents

10.1. The delivery period stipulated in the Contract/Purchase Order shall be deemed to be the essence of the contract and delivery of the Goods must be completed within the specified period.

10.2. Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in the Schedule of Requirements. The delivery of Goods shall be deemed to take place on delivery of the Goods in accordance with the terms of the contract after approval of Goods by the Inspector.

10.3. For purposes of the Contract, "EXW", "FOB", "FCA", 'CFR", "CIF", "CIP" and other trade terms used to describe the obligations of the Parties shall have the meanings assigned to them by the prevailing edition of *Incoterms* on the date of tender opening, published by the International Chamber of Commerce, Paris.

10.4. The details of shipping documents to be furnished by the Supplier are specified below:

(a) For Imported Goods:

Within forty eight (48) hours of shipment, the Supplier shall notify the Purchaser, Port Consignee and Ultimate Consignee by fax and email, full details of the shipment including Contract number, description of Goods, quantity, the vessel, the bill of lading number and date, port of loading, date of shipment, port of discharge, etc. The Supplier shall deliver by express courier service the following documents to the Purchaser, with a copy to the Port Consignee and Ultimate Consignee:

i. Supplier's shipping invoice showing Contract Number, Goods description, quantity, unit price, total amount and GST number of ultimate consignee;
ii. Clean on-board bill of lading indicating the Importer-Exporter Code (IEC) of the concerned Subsidiary Company of CIL and non-negotiable bill of lading;
iii. Packing list identifying contents of each package;
iv. Manufacturer's/Supplier's warranty /guarantee certificate;
v. Manufacturer's Test & Inspection certificate;
vi. Certificate of Country of Origin issued by the Chamber of Commerce of Manufacturer's Country;
vii. Documentary evidence of marine freight & marine insurance

The above documents shall be sent by supplier well in advance, so that the same are received by the Purchaser at least one (1) week before arrival of the Goods at the port or place of arrival and, if not received, the Supplier will be responsible for any consequent expenses.

(b) For Domestic Goods from within India:

Upon dispatch of the Goods to the consignee, the Supplier shall notify the Purchaser and Ultimate Consignee and deliver by express courier service the following documents to the Purchaser with a copy to the Ultimate Consignee:

i. Supplier's invoice showing Contract Number, Goods description, quantity, unit price, total amount;
ii. Railway receipt/ Transporter's consignment note /acknowledgement of receipt of Goods from the consignee(s);
iii. Manufacturer's/Supplier's warranty / guarantee certificate;
iv. Manufacturer's Test & Inspection certificate;

The above documents shall be provided by the supplier at the time of arrival of the Goods at the consignee's end. In case of delay, the Supplier will be responsible for any consequent expenses.

11. Insurance

11.1. Wherever necessary, the goods supplied under the contract, shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, delivery, storage and erection and commissioning at site (wherever applicable) in the manner specified in the contract. The insurance is to be done for coverage on "all risks" basis including war risks and strike clauses. The amount to be covered under insurance should be 110% of the invoice value to take care of the overall expenditure to be incurred by the purchaser for receiving the goods at the destination.

11.2. Where delivery of imported goods is required by the purchaser on CIF/CIP basis, the supplier shall arrange and pay for marine/air insurance, making the purchaser as the beneficiary. Where delivery is on FCA/ FOB/ CFR basis, marine/air insurance shall be the responsibility of the purchaser.

11.3. In case of domestic supplies on Free Delivery at site/FOR Destination basis, the supplier has to arrange insurance at its cost. For Ex-works and FOR station of dispatch contracts, it is the responsibility of the purchaser to arrange for insurance.

11.4. Where the delivery of the Goods is on CIP Basis, the supplier shall deliver the goods at the named place of destination at its own risks and costs. CIL has no obligation to the supplier for arranging insurance. However, CIL will provide the supplier upon request, with necessary information for obtaining insurance.

11.5. Where the delivery of the Goods is on FOR destination Basis, the supplier shall deliver the goods at the FOR destination site at its own risks and costs. CIL has no obligation to the supplier for arranging insurance. However, CIL will provide the supplier upon request, with necessary information for obtaining insurance".

12. Transportation

12.1. In case of FOB (Port of Shipment) contracts, the purchaser has to arrange transportation its own cost and risk.

12.2. In case of CIF (Port of Destination) contracts, transport of the goods to the port of destination in the Purchaser's country, as shall be specified in the contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price. In case of inland transportation of goods, the same is to be done through registered common carriers only.

12.3. In case of CIP (Final Place of Destination) contracts, transport of the goods to the port of destination and further to the named place of Final Destination in the Purchaser's country, as shall be specified in the contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price. In case of inland transportation of goods, the same is to be done through registered common carriers only.

12.4. In case of FOR Destination contracts, transport of goods to the Destination site shall be arranged and paid for by the supplier and the cost thereof shall be included in the contract price. Transportation of goods is to be done through registered common carriers only.

13. Warranty

13.1. The Supplier warrants that the Goods supplied under the Contract are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship or from any act or omission of the Supplier that may develop under normal use of the supplied Goods in the conditions prevailing in the purchaser's country.

13.2. This warranty shall remain valid for twelve (12) months from the date of Commissioning of the equipment. However, in case of other Goods, warranty shall remain valid for eighteen (18) months from the date of receipt and acceptance of materials at consignee's end or twelve (12) months from the date of its use / fitment / commissioning, whichever is earlier.

13.3. The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty. The Supplier shall, within thirty days, repair or replace the defective Goods or parts thereof, free of cost at the ultimate destination. The Supplier shall take over the replaced parts/Goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/Goods thereafter.

13.4. If the Supplier, having been notified, fails to remedy the defect(s) within thirty days, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

13.5. For the goods whose life is less than twelve (12) months, the warranty period will depend on the nature of the item under procurement and shall accordingly be specified in SCC.

14. Payment

14.1. Specific payment terms may be stipulated in the NIT and the resultant contracts depending on the nature of goods to be procured, as per provisions contained in Chapter-22.

14.2. **Payment for Indian Agency Commission**

The payment of Indian Agency Commission, if any, involved, may be considered in case of necessity, subject to compliance of the Government of India guidelines issued from time to time. Agency commission, if any, shall be paid in equivalent Indian Rupees, after erection and commissioning of the equipment, wherever applicable, within twenty-one days of submission of bills along with following documents:

(A) Copy of foreign principal's invoice.
(B) Copy of bill of lading.
(C) Certificate from State Bank of India regarding Bill selling exchange rate ruling on the date of bill of lading (in case of bank holiday on date of bill of lading, Bill Selling exchange rate on next working day shall be considered).
(D) In case of procurement of equipment, commissioning certificate signed by the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Technical Dept. of the subsidiary company, where the equipment has been deployed.

14.3. In order to enable the purchaser to avail Input Tax Credit as per applicable Indian laws, the supplier shall furnish all the necessary documents to the consignee / paying authority as required, failing which the equivalent deduction will be made from the supplier's bills. In case of successful bidder(s), if at the time of supply, it is found that Input Tax Credit as per Invoice (Credit available to CIL / Subsidiary on this account) is less than the "Input Tax Credit Amount" declared in the Price Bid, the differential amount between the two shall be deducted from the Supplier's bills while making payment to them. If the evaluation of the supplier has been made considering the concessional rate of customs duty applicable for import from certain countries under trade agreements / treaties with Govt. of India, all the required documentation for availing concessional customs duty and subsequent customs clearance etc. will be provided by the supplier failing which the equivalent deduction will be made from their bills.

15. Changes in Order

The Purchaser may at any time, by a written order given to the Supplier, make changes within the general scope of the Contract in any one or more of the following:

a) drawings, designs or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
b) the method of shipment or packing;
c) the place of delivery; and/or
d) the place of Services to be provided by the Supplier.

16. Contract Amendments

Subject to relevant clause of GCC, no variation in or modification of the terms of the Contract/ Purchase Order shall be made except by written amendment issued against the Contract/ Purchase Order.

17. Assignment

The Supplier shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Purchaser's prior written consent. However, the consent of the Purchaser shall not relieve the supplier from any obligation, duty or responsibility under the contract.

18. Subcontracts

The Supplier shall notify the Purchaser in writing of all subcontracts awarded by it to discharge the works under this Contract. Such notification, in the original bid or later, shall not relieve the Supplier of any liability or obligation under the Contract and the supplier will be solely responsible for all obligations under the contract.

19. Delays in the Supplier's Performance

19.1. Delivery of the Goods and performance of Services shall be made by the Supplier in accordance with the time schedule prescribed by the Purchaser in the Schedule of Requirements.

19.2. If at any time during performance of the Contract, the Supplier or its Subcontractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, with or without liquidated damages, by way of an by amendment to the Contract/ Purchase Order.

19.3. Except as provided under Force Majeure clause, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages, unless an extension of time is agreed upon pursuant to relevant clause without the application of liquidated damages.

20. Liquidated Damages

20.1. In the event of failure to deliver or dispatch the equipment/stores within the stipulated date/period in accordance with the terms and conditions and the specifications mentioned in the supply order and in the event of breach of any of the terms and conditions mentioned in the supply order, the Purchaser shall have the right:

(a) To recover from the successful bidder as agreed liquidated damages, a sum not less than 0.5% (Half Percent) of the price of any equipment/ stores which the successful tenderer has not been able to supply as aforesaid for each week or part of a week during which the delivery of such stores may be in arrears limited to 10% (Ten Percent) of the total contract value, or

(b) To purchase elsewhere after due notice to the successful tenderer on the account and at the risk of the defaulting supplier, the equipment/stores not supplied or others of similar description without cancelling the supply order in respect of the consignment not yet due for supply, or

(c) To cancel the supply order or a portion thereof, and if so desired to purchase the equipment/ stores at the risk and cost of the defaulting supplier and also,

(d) To extend the period of delivery with or without penalty as may be considered fit and proper. The penalty, if imposed, shall not be more than the agreed liquidated damages referred to in clause (a) above.

(e) To forfeit the security deposit fully or in part.

(f) Whenever under this contract any sum of money is recoverable from and payable by the supplier, the Purchaser shall be entitled to recover such sum by appropriating in part or in whole by deducting any sum or which at any time thereafter may become due to the successful tenderer in this or any other contract. Should this sum be not sufficient to recover the full amount recoverable, the successful tenderer shall pay the Purchaser on demand the remaining balance. The supplier shall not be entitled to any gain on any such purchase.

20.2. For the purpose of the calculation of the liquidated damages amount, the basic FOR Destination price shall be considered. For direct imports, the CIP price at Final Place of destination will be considered. Taxes and duties shall not be taken into account for calculation of LD. However, when prices indicated in the order are inclusive of taxes and duties, such prices will be taken for calculation of LD.

21. Termination for Default and breach of contract

21.1. The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:

(a) If the supplier fails to deliver any or all of the stores within the time period(s) specified in the contract, or any extension thereof granted by the Purchaser; or

(b) If the supplier fails to perform any other obligation under the contract within the period specified in the contract or any extension thereof granted by the purchaser; or

(c) If the Supplier, in the judgement of the Purchaser, has violated Code of Integrity for Public Procurement in competing for or in executing the Contract.

21.2. Code of Integrity for Public Procurement (CIPP):

The supplier shall observe the highest standard of ethics while competing for and during execution of contracts.

The following practices would amount to violation of CIPP:

i. "Corrupt Practice" means making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;

ii. "Fraudulent Practice" means any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in the execution of a contract;

iii. "Anti-competitive Practice" means any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act 2002, between two or more bidders, with or without the knowledge of the Purchaser, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;

iv. "Coercive Practice" means harming or threatening to harm, directly or indirectly, at any stage, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

v. "Conflict of interest" means participation by a bidding firm or any of its affiliates that are either involved in the consultancy contract to which this procurement is linked; or if they are part of more than one bid in the procurement; or if the bidding firm or their personnel have relationships or financial or business transactions with any official of Procuring Entity who are directly or indirectly related to tender or execution process of contract; or improper use of information obtained by the (prospective) bidder from the Procuring Entity with an intent to gain unfair advantage in the procurement process or for personal gain; and

vi. "Obstructive practice" means materially impede the Procuring Entity's investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the Procuring Entity's rights of audit or access to information.In the event the Purchaser terminates the Contract in whole or in part, pursuant to relevant clause, the Purchaser may procure on such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

22. Force Majeure

22.1 Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable. Such events may include, but are not restricted to, acts of the purchaser either in its sovereign or contractual capacity, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, freight embargoes and act of God.

22.2 If there is delay in performance or other failures by the supplier to perform its obligation under the contract due to an event of a Force Majeure and the contract is governed by Force Majeure Clause, the supplier shall not be held responsible for such delays/failures.

22.3 In such a situation, the supplier shall promptly notify the purchaser in writing of such conditions and the cause thereof, duly certified by the local Chamber of Commerce or Statutory authorities, the beginning and end of the causes of the delay, within twenty one days of occurrence and cessation of such Force Majeure Conditions. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

22.4 If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side.

22.5 For delays arising out of Force Majeure, the supplier will not claim extension in completion date for a period exceeding the period of delay attributable to the causes of Force Majeure.

22.6 There may be a Force Majeure situation affecting the purchaser also. In such a situation, the purchaser is to take up with the supplier on similar lines as above for further necessary action.

22.7 The contract shall be governed by the following Force Majeure Clause:

"If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, freight embargoes or act of God (hereinafter referred to "events") provided, notice of the happening of any such event is given by either party to the other within 21 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non- performance or delay in performance, and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, PROVIDED

FURTHER that if the performance in whole or part or any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 60 days, either party may at its option terminate the contract provided also that if the contract is terminated under this clause, the purchaser shall be at liberty to take over from the contractor at a price to be fixed by the CIL/Subsidiary Company, which shall be final, all unused, undamaged and acceptable materials, bought out components and stores in course of manufacture in the possession of the contractor at the time of such termination or such portion thereof as the purchaser may deem fit excepting such materials, bought out components and stores as the contractor may with the concurrence of the purchaser elect to retain."

23. Termination for Insolvency

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

24. Termination for Convenience

24.1 The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

24.2 The Goods that are complete and ready for shipment within thirty (30) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

a) to have any portion completed and delivered at the Contract terms and prices; and/or

b) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Services and for materials and parts previously procured by the Supplier.

25. Governing Language

The Contract shall be written in English language. All correspondence and other documents pertaining to the Contract which are exchanged by the Parties shall be written in the same language.

26. Taxes and Duties

26.1 A foreign Supplier shall be entirely responsible for all taxes, duties, license fees and other such levies imposed outside the Purchaser's country. The foreign supplier shall also be responsible for all taxes & duties in Purchaser's country legally applicable during execution of the contract other than those which are to be paid by purchaser, as specified in as per relevant clause of NIT.

26.2 A Domestic Supplier shall be entirely responsible for all taxes, duties, licence fees etc., incurred until the execution of the contract, other than those which are to be paid by purchaser, as specified in as per relevant clause of NIT.

27. Limitation of Liabilities

Except in cases of criminal negligence or wilful misconduct;

27.1 Notwithstanding anything herein to the contrary, no party shall be liable for any indirect, special, punitive, consequential or exemplary damages, whether foreseeable or not, arising out of or in relation to this contract, loss of goodwill or profits, lost business however characterised, any/ or from any other remote cause whatsoever.

27.2 The supplier shall not be liable to the purchaser for any losses, claims, damages, costs or expenses whatsoever arising out of or in connection with this contract in excess of the contract value of the goods and services supplied hereunder which caused such losses, claims, damages, costs or expenses.

27.3 However, the limitation of liability of the supplier indicated above shall not apply to Liquidated damages.

28. Settlement of commercial disputes in case of contracts with Public Sector Enterprises/ Govt. Dept.(s)

28.1 In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between CPSEs and Government Departments/ Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for its resolution through Administrative Mechanism for Resolution of

CPSEs Disputes (AMRCD), as per the guidelines stipulated in the Office Memorandum No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22.05.2018 of Department of Public Enterprises, Ministry of Heavy Industries and Public Enterprises, Govt. of India.

28.2 In case of contract with a Public Sector Enterprise or Govt. Dept., the following Arbitration Clause shall be incorporated in the contract:-

"*In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/ Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22.05.2018.*"

29. Progress Reports

29.1 The Supplier shall from time to time render such reports concerning the progress of the contract and/or supply of the stores in such form as may be required by the Purchaser.

29.2 The submission, receipt and acceptance of such reports shall not prejudice the right of the Purchaser under the contract nor shall operate as an estoppel against the Purchaser merely by reason of the fact that he has not taken notice of or objected to any information contained in such report.

30. Provisions of CIL's Purchase Manual

The provisions of CIL's Purchase Manual and its subsequent amendments (Available on CIL's website, www.coalindia.in) shall also be applicable, if not specified otherwise in this Bid document.

31. Applicable Law

The Contract shall be governed by the laws of the Republic of India, unless otherwise specified in the bid document.

32. Jurisdiction of Courts

32.1 Irrespective of the place of delivery, the place of performance or place of payment under the contract, the contract shall be deemed to have been made at the place from where the acceptance of tender or supply order has been issued.

32.2 The courts of the place from where the acceptance of tender has been issued shall alone have jurisdiction to decide any dispute arising out of or in respect of the contract.

33. Notices

33.1 Any notice given by one Party to the other pursuant to this Contract shall be sent to the other Party in writing or facsimile to be confirmed in writing, to the other Party's address. For the purpose of all notices, the following shall be the addresses of the Purchaser and the Supplier:

Purchaser:
General Manager (MM),
Coal India Limited or Subsidiary company,
[-----address-------
----------India]
Fax No.:+91 ----------
Phone: +91 ----------

Supplier:

[----------
Fax No.:+91 ----------
Phone: +91 ----------]

33.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

33.3 In case of change in address, the Supplier shall immediately notify the same to the Purchaser in writing. The supplier shall be solely responsible for the consequences of omission to notify the change of address to the Purchaser.

Section IV - Special Conditions Of Contract (SCC)

Special Conditions of Contract (SCC)

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions contained herein shall prevail over those in the General Conditions of Contract. The corresponding Clause number of the General Conditions is indicated in parentheses. Further, there are some additional clauses in SCC.

1. **Security Deposit (GCC clause –6)**

1.1 The successful tenderers will have to submit Security Deposit for the 10% value of the total landed value of the contract including all taxes, duties and other costs and charges without considering Input Tax Credit.

1.2 In case of FOR destination contract in Indian Rupees, the total landed value of the contract will be arrived at after adding GST and any other tax and duty, if applicable and any other cost and charge, if applicable, to the FOR Destination price of the ordered Equipment, Consumable Spares & Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years.

1.3 In case of CIP contract in foreign currency, the total landed value of the contract will be arrived at after adding Customs Duty, GST and any other tax and duty, where ever applicable and any other cost and charge, if applicable, to CIP price of the ordered equipment, Consumable Spares & Consumables for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9/14/21/24] years.

1.4 The Security Deposit is to be submitted in the form of a Bank Demand Draft or in the form of a Bank Guarantee as per format enclosed as [Annexure-12], Sample Forms, Section-VII, from a RBI Scheduled Bank in purchaser's country (on a non-judicial stamp paper) within 30 days from date of Notification of Award. In case the SDBG is not submitted within 30 days from the date of NoA, a penalty equivalent to 0.5% (half percent) of SD amount for delay of each week or part thereof (period of delay is to be calculated from the 31st day from the date of NoA to the date of receipt of full SD shall be levied and paid by the successful tenderer along with the SDBG. However, SDBG is to be submitted within 60 days from the date of NoA failure of which will amount to annulment of the award and forfeiture of the EMD.

1.5 The Security Deposit shall be in the same currency (ies) in which contract is to be signed. In case of multi-currency contract, separate Security Deposit Bank Guarantee (SDBG) in respective currency for required value as above shall be submitted.

1.6 SDBG shall not be individual equipment wise. However, multiple Bank Guarantees for Security Deposit shall be permissible provided value of all the SDBGs totals to 10% of the contract value, and all are submitted simultaneously within the specified time schedule as mentioned above and all of them are in the same prescribed format of SD without linking to any particular equipment.

1.7 The SDBG shall remain valid upto commissioning of all the equipment covered in the contract with claim period of 12 months. The SDBG will be released within 30 days after successful commissioning of all the equipment covered in the contract and on receipt of confirmation of Performance Bank Guarantee (s) for all the equipment covered in the contract, as detailed in clause-2 below. The Bank Guarantee for Security Deposit shall be extended till the Performance Bank Guarantee (s) are submitted by the

firm, failing which Security Deposit will be forfeited.

1.8 The SDBG issued by issuing bank on behalf of the bidder in favour of "Coal India Ltd.," shall be in paper form (Stamp Paper) as well as issued under "Structured Financial Messaging System". Issuing Bank should send the underlying confirmation message in IFN760COV or IFN767COV message type for getting the BG advised through our bank. Also issuing bank should mention "CIL0066312" in field no. "7037" of IFN760COV or IFN767COV .The message will be sent to the beneficiary bank through SFMS. The details of beneficiary Bank for issue of BG through SFMS Platform is furnished below:-

Name of Bank: ICICI Bank
Branch: Rasoi Court
IFSC Code: ICIC0000006
Account No. 000651000038
Customer ID: 066312

Original copy of the Bank Guarantee issued by the Issuing Bank shall be sent by the issuing bank to MM department, CIL.

1.9 If the successful tenderer fails to deposit the security deposit within the extended period of 60 (sixty) days from date of notification of award, or fails to extend the Bank Guarantee for Security Deposit, suitably as required, the same shall also be recorded as unsatisfactory performance for future dealings apart from taking any other penal action as may be deemed fit by CIL.

1.10 Security Deposit may be converted into Performance Bank Guarantee (PBG) wherever PBG is required at the option of the supplier. At the time of conversion of security money into PBG, it should be ensured that the amount of PBG should not be less than 10% of landed value of order. Wherever Security Deposit is converted into PBG, the operation of such SDBG/Performance BG shall be guided by Performance Bank Guarantee Clause mentioned below.

1.11 **Exemption to the following Firms in India from Security Deposit:** Any Central/ State Government Organizations / PSUs shall be exempted from submission of Security Deposit.

2. Performance Bank Guarantee (PBG) (GCC Clause 7)

2.1 The successful tenderer shall be required to furnish a Performance Guarantee equivalent to 10% value of the total landed value of the contract including all taxes, duties and other costs and charges without considering Input Tax Credit subsidiary-wise. The total landed value of the contract subsidiary wise will be worked out in line with the stipulations indicated at clause -1.2 and 1.3 above. The PBG will be required to be submitted subsidiaries wise to Paying Authority of concerned subsidiaries.

2.2 The Performance Guarantee shall be in the form of a Bank Guarantee issued by a RBI scheduled bank in India in the format attached as [Annexure-13], Sample Forms, Section-VII on a non-judicial stamp paper.

2.3 The Performance Bank Guarantee (PBG) shall be in the same currency (ies) in which contract has been signed. In case of multi-currency contract, separate PBG in respective currency for required value shall be submitted.

2.4 The Performance Bank Guarantee (s) may be submitted equipment wise to the

concerned subsidiary where the equipment will be supplied. For this purpose, the value of each equipment will be worked out by dividing the total value of contract worked out as per provisions contained in clauses 1.2 and 1.3 above, by the number of equipment ordered.

2.5 The PBG (s) shall remain valid upto the completion of [10/15/22/25] years (as the case may be) period from the date of commissioning of all the equipment covered in the contract, with claim period of 12 months.

2.6 The PBG shall be submitted, sufficiently in advance (say 3-4 weeks) to enable its verification before submission of the invoice for 80% payment of the particular equipment(s).

2.7 The PBG issued by Issuing bank on behalf of the bidder in favour of "concerned subsidiary where the equipment will be supplied" shall be in paper form (Stamp Paper) as well as issued under "Structured Financial Messaging System". The details of beneficiary Bank for issue of BG through SFMS Platform will be provided by the concerned subsidiary. Original copy of the PBG issued by the Issuing Bank shall be sent by the issuing bank to concerned subsidiary.

2.8 In case the Supplier desires to convert SDBG into PBG at its option, extension of SDBG for the requisite period is to be submitted before submission of the invoice for 80% payment of the first equipment of the contract.

2.9 The release of the Performance Bank Guarantee(s) / converted SDBG after above indicated period, shall be subject to satisfactory performance of the equipment during [10/15/22/25] years period from the date of commissioning of the equipment and fulfillment of contractual obligations failing which, action for further extension or encashment of PBG / converted SDBG, as deemed suitable shall be taken. Release of PBG for each equipment may be done separately on satisfactory performance of the respective equipment as above. In case of converted SDBG, the release will be done only after satisfactory performance of all the equipment covered in the Contract or in case of unsatisfactory performance of some equipment, on receipt of the Claim amount from the Supplier or with suitable deductions for unsatisfactory performance of equipments, if any from the converted SDBG. Whenever deductions for unsatisfactory performance of equipment are made within the tenure of the PBG, the amount deducted from the PBG should be replenished within a month in order to ensure that the original value of the PBG remains the same.

2.10 In case of successful tenderer which does not have the After Sales Service Support facilities in India, as mentioned in Clause 5.2, ITB, Sec-II, additional Performance Bank Guarantee for the 30% value of the total landed value of the contract including all taxes, duties and other costs and charges as defined in clauses 1.2 & 1.3 above shall have to be submitted to CIL(HQ). This 30% PBG will be released after establishment of After Sales Service Support facilities in India for the ordered equipment within completion of warranty period of the first equipment commissioned or earlier subject to confirmation of the same by GM/ HOD (EED), CIL in consultation with GM/HOD (Excavation) of the subsidiaries concerned where the equipment(s) have been deployed. However, the supplier shall have to submit PBG for 10 % of the total contract value to be kept valid for the remaining period of the contract plus 3 months processing period before release of 30 % PBG. The total contract period is [10/15/22/25] years (as the case may be) from the date of commissioning of all the equipment covered in the contract. This 10% PBG will be released after satisfactory performance of all equipment and fulfillment of contractual obligations.

3. Inspection and Test (GCC Clause 8)

3.1 Pursuant to Clause 8.1 of the GCC, details of specific inspections and/or tests to be carried out at the Supplier's works and/or at the Site(s) are given in Section VI, Technical Specifications.

3.2 Clause 8.3 of the GCC is modified to read as follows:
"Should any inspected or tested Goods fail to conform to the Specifications, including acceptance tests and periodic tests to verify guaranteed performance, the Purchaser may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet Specification requirements free of cost to the Purchaser within sixty (60) days of such rejection. Replaced or altered goods shall be subjected to repeated inspection or tests to demonstrate conformity with the Specifications. In the event that replacement or alteration is not done within sixty day period as aforesaid, or, replaced or altered goods fail to demonstrate conformity with the Specifications in repeated inspections or tests as aforesaid, the Purchaser reserves the right to terminate the Contract in part or in whole and the Supplier shall repay forthwith to the Purchaser all monies paid in respect of Goods, and Services associated therewith, for which the termination is applicable and, subsequently remove the same from the Purchaser's Site at the Supplier's cost".

3.3 The following Clause is added as Clause 8.7 to the GCC:

"The Purchaser or its nominated representative shall have the right to conduct inspections or tests as set out in this Clause at any reasonable time. The Purchaser reserves the right, at the Purchaser's cost, to depute its own inspector(s) and/or to engage any other third party inspecting agency, other than the one recommended by the Supplier, to conduct inspections and tests pursuant to the Contract".

4. Incidental Services

The following Services, shall be provided by the Supplier:

(a) Erection, Testing and Commissioning

Erection, testing and commissioning of the Equipment as detailed in the Schedule of Requirements (Section-V) and the Technical Specifications (Section-VI).

The supplier shall be responsible for the erection and commissioning within [120 days for 42 CuM Electric Rope Shovels, 90 days for 20 CuM Electric Rope Shovels and 30 days for Hydraulic Shovels] from the receipt of equipment at site.

The purchaser will provide necessary cranes, electricity and fuel required for testing only. All other erection tools & tackles including manpower will be arranged by the supplier. Any substantial delay in providing cranes from purchaser side will be recorded jointly for calculation purpose of erection & commissioning time.

If the supplier fails to commission the equipment within the specified period as mentioned above, Liquidated damages will be recovered @ 0.5% of the landed price of the equipment along with accessories per week or part thereof for the delayed period subject to a maximum of 5% of the landed price of equipment along with accessories.

(b) Tools

Furnishing of tools required for assembly and maintenance of the supplied Goods as detailed in the Schedule of Requirements (Section-V) and the Technical Specifications (Section-VI). A complete list as per clause-A.2 of Technical Specifications (section-VI) is to be furnished by the supplier.

(c) Manuals

Furnishing of detailed operating, repair, maintenance and spare parts manuals as detailed in the Technical Specifications (Section-VI).

(d) Training

Training of the Purchaser's personnel as detailed in the Schedule of Requirements (Section-V) and the Technical Specifications (Section-VI). The cost of such Services shall be included in the Contract Price.

The Supplier shall be responsible for arranging and the cost of all necessary tickets, visas, permits, foreign exchange and any other matter or facility for visits of the Supplier's personnel for the purposes of Erection, Testing and Commissioning the Equipment and/or Training of the Purchaser's personnel - the Purchaser shall have no responsibility in this regard except in respect of issuance of letters supporting visa applications as may reasonably be requested by the Supplier. The Supplier shall be responsible for paying taxes, if any, including personal income tax and surcharge on income tax, for which it or its personnel may become liable.

5. Insurance (GCC Clause-11)

Pursuant upon Clause-11.1, GCC, the insurance coverage of the goods will be upto successful erection and commissioning of the equipment at site.

6. Transportation (GCC Clause-12)

Add the following paragraph to the Clause-12.3, GCC:

"Marine Freight and Insurance Charges shall be paid at actuals subject to the ceiling of quoted amount. Inland Freight and Insurance charges shall be paid at actuals but not beyond the composite rate/ price quoted under this head."

7. Warranty (GCC Clause-13)

The "thirty days" mentioned in Clauses-13.3 and 13.4 of the GCC shall stand replaced by "sixty days".

8. Payment (GCC Clause 14)

8.1 Pursuant to Clause-14.1 of the GCC, the payment terms are as follows:

8.2 Payment shall be made in the currency or currencies specified in the contract in the following manner:

8.2.1 For Payment of equipment in Indian Rupees:

(a) 80% value of the equipment and 100% taxes and duties and other charges excluding erection and commissioning charges shall be made within 21 days after receipt and acceptance of materials at site at the consignee's end, and submission of either:

A. Performance Bank Guarantee having validity till the completion of [10/15/22/25] years from the date of commissioning of all the equipment covered in the contract, with claim period of one year; or

B. Copy of validity extension of SDBG, in case SDBG is converted into Performance Bank Guarantee at the option of the supplier, till the completion of [10/15/22/25] years from the date of commissioning of all the equipment covered in the contract, with claim period of one year;

(b) Balance 20% payment including erection and commissioning charges shall be made within 21 days after successful completion of erection, testing, commissioning and final acceptance of the equipment (along with the accessories) upon presentation of successful commissioning certificate, signed by the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Excavation Deptt. of the subsidiary company, where the equipment has been deployed.

(c) Inland Freight and transit insurance charges shall be paid at actuals subject to ceiling of the composite quoted rates/ prices under this head.

8.2.2 For Payment of consumable spares and consumables for first 12 months of warranty period in Indian Rupees:

100% value of the spares and consumables and 100% taxes and duties and other charges shall be made within 21 days of receipt and acceptance of materials at consignee's end after successful commissioning of the equipment.

8.2.3 For Payment of spares and consumables for [9/14/21/24] years after the warranty period of 12 months in Indian Rupees:

100% value of the spares and consumables and 100% taxes and duties and other charges shall be made within 21 days after receipt and acceptance of materials at consignee's end.

8.2.4 Submission of Documents for Payment in Indian Rupees for equipment

For payment for equipment in Indian Rupees, the supplier will submit the following documents along with bills to the paying authority:

a. Four copies of the Supplier's invoice, Pre-Receipted and Stamped showing Contract Number, Goods description, quantity, unit price, total amount and GST No. of Ultimate Consignee.

b. Receipted Challan/ Consignment Note of all the consignments.

c. Manufacturer's Test & Inspection Certificate.

d. Manufacturer's Warranty /Guarantee Certificate.

e. The following Lowest Price Certificate as per SCC clause - 9.2 :
"We certify that prices for the items supplied are the lowest and not higher than as applicable to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization".

f. The following Price Fall Certificate as per SCC Clause- 9.3 "
"We certify that we have not offered to supply / supplied the ordered / similar item(s) at a lower rate to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization during the currency of the Contract".

g. Copy of Performance Bank Guarantee as per Clause –2, SCC, Sec-IV and original copy of acceptance letter of this PBG by the concerned subsidiary **OR** Copy of validity extension of SDBG, in case SDBG is converted into

Performance Bank Guarantee at the option of the supplier as per Clause –1.11, SCC, Sec-IV and original copy of acceptance letter of this extended SDBG by CIL.

h. Documentary evidence for freight and transit insurance charges up to the destination.

i. Copy of Certificate of Insurance.

j. Any other document(s) required as per contract.

8.2.5 Submission of Documents for Payment in Indian Rupees for spares and consumables

For payment for Spares and consumables in Indian Rupees, the supplier will submit the following documents along with bills to the paying authority:

a. Four copies of the Supplier's invoice, Pre-Receipted and Stamped showing Contract Number, Goods description, quantity, unit price, total amount and GST No. of Ultimate Consignee.

b. Receipted Challan/ Consignment Note of all the consignments.

c. Manufacturer's Warranty /Guarantee Certificate.

d. The following Lowest Price Certificate as per SCC clause - 9.2 :
"We certify that prices for the items supplied are the lowest and not higher than as applicable to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization".

e. The following Price Fall Certificate as per SCC Clause- 9.3 "
"We certify that we have not offered to supply / supplied the ordered / similar item(s) at a lower rate to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization during the currency of the Contract".

f. Any other document(s) required as per contract.

8.3.1 For Payment of equipment in foreign Currency

i) An unconfirmed, irrevocable letter of credit will be established for net CIF value after deducting Indian Agency Commission, if any from the CIF value.

ii) 80% payment of the net CIF value will be made through unconfirmed, irrevocable letter of credit against submission of:
   A. shipping documents;
   B. submission of either:
      i. Copy of Performance Bank Guarantee and original copy of acceptance letter of this PBG by the concerned subsidiary ; or
      ii. Copy of validity extension of SDBG, in case SDBG is converted into Performance Bank Guarantee at the option of the supplier, and original copy of acceptance letter of this extended SDBG by CIL;

   C. Receipted challan / consignment note of all the consignments,

iii) Balance 20% of the net CIF value will also be paid through same unconfirmed irrevocable, letter of credit against submission of successful commissioning certificate, signed by the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Excavation Deptt. of the subsidiary company, where the equipment has been deployed.

iv) The Marine freight and Marine Insurance charges shall be paid at actual subject to ceiling of the quoted amount.

All bank charges incidental to opening of letter of credit in purchaser's country shall be borne by purchaser and all charges in the seller's country shall be borne by the beneficiary.

The letter of credit shall not be confirmed. In case the bidder insists for confirmation of the letter of credit, the cost of confirmation shall be borne by the bidder.

L/C shall be opened by the paying authority of the concerned subsidiary, only after receipt of Security Deposit by CIL.

L/C shall allow partial shipment and trans-shipment

The INR component of CIP value shall be paid after successful completion of erection, testing, commissioning and final acceptance of the equipment (along with the accessories) upon presentation of successful commissioning certificate, signed by the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Excavation Deptt. of the subsidiary company, where the equipment has been deployed. The Inland freight and Insurance charges shall be paid at actual subject to ceiling of the quoted composite rate/ price quoted under this head.

8.3.2 For Payment of consumable spares and consumables for first 12 months of warranty period in foreign Currency:

100% payment of the net CIF value after deducting Indian Agency Commission, if any from the CIF value will be made within 21 days of receipt and acceptance of materials at consignee's end after successful commissioning of the equipment, against submission of shipping documents and receipted challan / consignment note of all the consignments, through unconfirmed, irrevocable letter of credit. Letter of Credit shall be opened on receipt of intimation of the readiness of goods in the respective years of supply.

The INR component of CIP value shall be made within 21 days after receipt and acceptance of materials at consignee's end, after successful commissioning of the equipment.

The Marine freight, Marine Insurance, Inland freight and Insurance charges, as applicable shall be paid at actual subject to ceiling of the quoted amount.

8.3.3 For Payment of spares and consumables for [9/14/21/24] years after the warranty period of 12 months in foreign Currency:

100% payment of the net CIF value after deducting Indian Agency Commission, if any from the CIF value will be made against submission of shipping documents and receipted challan / consignment note of all the consignments, through unconfirmed, irrevocable letter of credit. Letter of Credit shall be opened on receipt of intimation of the readiness of goods in the respective years of supply.

The INR component of CIP value shall be made within 21 days after receipt and acceptance of materials at consignee's end.

The Marine freight, Marine Insurance, Inland freight and Insurance charges, as applicable shall be paid at actual subject to ceiling of the quoted amount.

8.3.4 Submission of Documents for Payment in foreign Currency for equipment

For 80% Payment:

For Payment for equipment in foreign Currency, the supplier will submit the following documents along with bills to the bank for negotiating L/C:

a. Four (4) copies of the Supplier's shipping invoice showing Contract Number, Goods description, quantity, unit price, total amount and GST No. of Ultimate Consignee.

b. Three (3) copies of the clean on-board bill of lading and four (4) copies of non-negotiable bill of lading. Importer Exporter Code (IEC) of concerned subsidiary Co. should be mentioned in Bill of Lading.

c. Four (4) copies of packing list identifying contents of each package.

d. Manufacturer's Warranty /Guarantee Certificate.

e. Manufacturer's Test & Inspection Certificate.

f. The following Lowest Price Certificate as per SCC clause - 9.2 :
"We certify that prices for the items supplied are the lowest and not higher than as applicable to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization".

g. The following Price Fall Certificate as per SCC Clause- 9.3 "
"We certify that we have not offered to supply / supplied the ordered / similar item(s) at a lower rate to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization during the currency of the Contract".

h. Certificate of Country of Origin issued by the Chamber of Commerce of Manufacturer's Country.

i. Copy of Performance Bank Guarantee as per Clause –2, SCC, Sec-IV and original copy of acceptance letter of this PBG by the concerned subsidiary **OR** Copy of validity extension of SDBG, in case SDBG is converted into Performance Bank Guarantee at the option of the supplier as per Clause –1.11, SCC, Sec-IV and original copy of acceptance letter of this extended SDBG by CIL.

j. A certificate that no commission is payable by the principal supplier to any agent, broker or any other intermediary against this contract other than -----% of FOB value of the contract to M/s. -----(Indian Agent). This certificate will form a part of letter of credit.

k. Goods Consignment Note supported by Challans of all the consignments, duly receipted by consignee, with the certificate from supplier that all the consignments for commissioning of complete equipment have been delivered (required only for equipment).

l. Copy of Certificate of Insurance.

m. Documentary evidence for Marine freight and Insurance.

n. Documentary evidence for Inland freight and transit insurance charges up to the destination.

o. Any other document(s) required as per contract

For 20% Payment:

a) Commissioning certificate, signed by the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Excavation Deptt. of the subsidiary company, where the equipment has been deployed.

b) Confirmation of receipt of DRR in respect of spares and consumables for first 12 months of warranty period from the date of commissioning of the

equipment by the paying authority.

8.3.5 Submission of Documents for Payment in foreign Currency for spares and consumables

For Payment for spares and consumables in foreign Currency, the supplier will submit the following documents along with bills to the bank for negotiating L/C:

a. Four (4) copies of the Supplier's shipping invoice showing Contract Number, Goods description, quantity, unit price, total amount and GST No. of Ultimate Consignee.
b. Three (3) copies of the clean on-board bill of lading and four (4) copies of non-negotiable bill of lading. IEC of concerned subsidiary Co. should be mentioned in Bill of Lading.
c. Four (4) copies of packing list identifying contents of each package.
d. The following Lowest Price Certificate as per SCC clause - 9.2 :
"We certify that prices for the items supplied are the lowest and not higher than as applicable to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization".
e. The following Price Fall Certificate as per SCC Clause- 9.3 "
"We certify that we have not offered to supply / supplied the ordered / similar item(s) at a lower rate to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization during the currency of the Contract".
f. Certificate of Country of Origin issued by the Chamber of Commerce of Manufacturer's Country.
g. A certificate that no commission is payable by the principal supplier to any agent, broker or any other intermediary against this contract other than -----% of FOB value of the contract to M/s. -----(Indian Agent). This certificate will form a part of letter of credit.
h. Goods Consignment note supported by Challans of all the consignments, duly receipted by consignee.
i. Copy of Certificate of Insurance.
j. Documentary evidence for Marine freight and Insurance.
k. Documentary evidence for inland freight and transit insurance charges up to the destination.
l. Any other document(s) required as per contract

8.4 In case of award of Contract against Clause 7.7.2, ITB, Section II involving payment in foreign currency, 2 (two) separate LCs will be opened. The 1st LC will be opened to cover the supply of the 1st Lot after issuance of the Contract and the 2nd LC will be opened for supply of the balance equipment after issuance of clearance certificate from CIL. Additional documents for submission of additional 100% PBG for the 1st lot equipment and spares and consumable for the warranty period and confirmation of its acceptance shall also be taken while opening the first LC.

8.5 **Payment for Indian Agency Commission (GCC Clause-14.2)**

The Clause-14.2, GCC is modified and the following is also added :

Indian Agency commission, if any, for equipment and consumable spares and consumables for 12 months of warranty period, shall be paid in equivalent Indian

Rupees within twenty-one days of submission of bills, after installation and commissioning of the equipment on submission of the following documents:

(A) Copy of foreign principal's invoice.
(B) Copy of bill of lading.
(C) Certificate from State Bank of India regarding Bill Selling exchange rate ruling on the date of bill of lading (in case of bank holiday on date of bill of lading, Bill Selling exchange rate on next working day shall be considered).
(D) Commissioning certificate signed by the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Excavation Deptt. of the subsidiary company, where the equipment has been deployed.

Paying Authority shall also obtain confirmation of receipt and acceptance of the consumable spares and consumables for first 12 months of warranty period from the date of commissioning of the equipment from the consignee before release of Indian Agency Commission.

Agency Commission, if any, for spares and consumables for 2nd to 25th years of operation (as the case may be – cluster-wise) from the date of commissioning of the equipment shall be paid in equivalent Indian Rupees on receipt and acceptance of the same at consignee's end. Paying Authority shall obtain confirmation of receipt and acceptance of the same from the consignee before release of Indian Agency Commission. The payment shall be made within twenty-one days of submission of bills along with following documents:

(A) Copy of foreign principal's invoice.
(B) Copy of bill of lading.
(C) Certificate from State Bank of India regarding Bill Selling exchange rate ruling on the date of bill of lading (in case of bank holiday on Date of bill of lading, Bill selling exchange rate on next working day shall be considered).

8.7 Paying Authority

The Paying Authority shall be General Manager (Finance) of the concerned subsidiary company headquarter.

9 Prices

9.1 Prices stated in the contract shall remain firm and fixed throughout the period of the Contract.

9.2 Lowest Price Certificate

The bidder shall submit a certificate along with the offer confirming the prices quoted in the tender are the lowest and not higher than as applicable to to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization for equipment and spares and consumables of same specifications.

9.3 Price Fall Clause

The Bidder undertakes that it has not offered to supply/ supplied / is not supplying same or similar product / systems or sub systems at a price lower than that offered in the present bid in respect of any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization

during the currency of the contract and if it is found at any stage that same or similar product / systems or sub systems was supplied by the bidder to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization at a lower price during the currency of the contract, then that very price will be applicable to the present case and the difference in the cost would be refunded by the bidder to buyer, if the contract has already been concluded.

Note :

i) The currency of contract will mean the period till completion of supply.
ii) It shall be responsibility of the supplier to inform the purchaser of offer to supply / supply of the ordered / similar item(s) at a lower rate to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization during the currency of the contract.
iii) The supplier shall submit a certificate along with the bill(s) that it has not offered to supply / supplied the ordered / similar item(s) at a lower rate to any Organization / Ministry / Department of the Govt. of India or Coal India Ltd. and/or its Subsidiaries or other PSU or any other private organization.

10 Banned or Delisted or Debarred or 'Put on Holiday' Suppliers

The bidder as well as the manufacturer (if bidder is not the manufacturer) will give a declaration that they have not been banned or de-listed or debarred or 'Put on Holiday' by any Government or quasi-Government agencies or PSUs. If a bidder and/or manufacturer has been banned or delisted or debarred or 'Put on Holiday' by any Government or quasi- Government agencies or PSU, this fact must be clearly stated and it may not necessarily be a cause for disqualifying them. If this declaration is not given, the bid will be rejected as non-responsive.-The declaration format is built in the Letter of Bid (LOB) which shall be filled in by the bidder suitably. In case India Agent or Indian Office or Indian Subsidiary of a Foreign Manufacturer / Indian Subsidiary of an Indian Manufacturer is quoting against the tender, the equipment manufacturer will also give a declaration towards '**Banned or Delisted or Debarred or 'Put on Holiday' Suppliers** in the Manufacturer's Authorisation Form, Annexure-4, Sec-VII, Sample Forms.

11 Distribution of Order

There will be distribution of order in the following circumstances:

a) When the L-I bidder has not offered the full quantity: In such cases, after coverage of quantity on L-I bidder as per its offer, the remaining quantity will be ordered on the L-2 bidder at the rate offered by the L-I bidder and for this purpose, L-I rate will be counter offered to L-2 bidder. If L-2 bidder does not accept the L-I rate or is also not able to meet the remaining requirement, then the balance quantity may be covered on L-3 bidder and this process will be followed till the entire tender quantity is covered. All such orders will be placed at the rate offered by the lowest responsive tenders (L-I).
b) As per provisions of the Clauses -37 (Make in India) and 38 (MSEs) of ITB.

12. Grace Period :

12.1 A grace period of 25% of original delivery period or 21 days, whichever is earlier, will be provided automatically in all the contracts, unless specifically disallowed. Where supplies are made within the grace period, there is no necessity for any extension in delivery period and the paying authorities will make payment without any amendment to the contract delivery period. No liquidated damages are leviable in respect of supplies made within the grace period. The extra expenditure, the purchaser may have to incur on account of increase/fresh imposition of GST/CST/VAT, Excise/Customs Duty etc. which takes place within the above grace period will also not be recoverable from the suppliers.

12.2 The grace period is allowed as a matter of grace and is not intended to operate as extension of the delivery period and the same will be available only for delivery and not for offering stores for inspection (in case of pre-dispatch inspections) which should be made within the original delivery period or the re-fixed date of delivery.

12.3 If the stores are tendered for pre-dispatch inspection within the original delivery period stipulated in the contract and the firm delivers the stores within the grace period, the purchaser is bound to accept the stores even though the inspection was completed after the delivery date.

12.4 The grace period will only apply to the original contract delivery period/refixed delivery period and will not be applicable once an extension of delivery has been granted.

13. Taxes and Duties (GCC Clause-26)

13.1 The following sub-clause is added to Clause-26, GCC :

Applicability of GST on Liquidates damages, EMD and/or Security Deposit forfeiture:

GST shall be applicable on liquidated damages, EMD and/or Security Deposit forfeiture and will be extra and recovered from suppliers/bidders.

Section V - Schedule of Requirements

Schedule of Requirements

Part I

Table – A [If the bidder qualifies as per clause – 7 (except sub clause 7.7.2): Provenness criteria, Section-II (ITB)]

Sl. No	Brief Description of Goods & Services	Quantity	Expected Delivery schedule at Site
1	YYYYYY	XX	At least … machines within ------ months from the date of Notification of Award. Thereafter at least --- machines per ---- month. Project wise Allocation: 1) ----------machines to ---------- 2) ----------machines to ---------- 3) ----------machines to ---------- 4) ----------machines to ---------- 5) ----------machines to ---------- Priority allocation will be indicated in the contract. In case of distribution of tendered quantity among more successful bidders, above delivery schedule shall be suitably modified at the time of conclusion of Contract on pro-rata basis. However, the commencement period for delivery will remain the same for each supplier. Adjustment to the excess supplies, if any, made against the above delivery schedule is admissible in case of subsequent short supplies.
2	AFDSS and other commissioning requirements as per Annexure – 7 of the NIT (contract), if any, and Ancillary Equipment for each equipment of Item 1 (above), as specified in Technical Specifications, Section-VI.	In accordance with item 1	Delivery to be made along with the Machine.

3	Provision of spare parts; - Operational, Maintenance and Standby/Contingency spare parts, consumable items, wear materials, maintenance tools, special tools in accordance with Part C.6 of the Technical Specification, Section-VI . The cost of Spare Parts requirement shall be quoted separately for each project making allowance for the total quantity of equipment allocated to that project. All costs of Spare parts shall identify unit cost, total cost, costs incidental to delivery, building up to a total cost CIP final place of destination / FOR destination.	[10/15/22 /25] years as the case may be	To comply with the terms of part C.6 of Technical Specifications, Section VI and in consideration of Items 1 and 2 above. The delivery of spare parts and consumables should be made as follows: a) Consumable spares and consumables required for first 12 months of warranty period – to be supplied by the commissioning of the equipment. b) Combined Spares and consumables required from 2nd to …. year (.. years after completion of warranty period) of operation from the date of commissioning of the equipment – To be supplied in …. lots within this cluster. c) Combined Spares and consumables required from ...th to ...th year (next .. years) of operation from the date of commissioning of the equipment – To be supplied in … lots within this cluster. d) Combined Spares and consumables required from ...th to ...th year (next … years) of operation from the date of commissioning of the equipment – To be supplied in …. lots within this cluster. e) Combined Spares and consumables required from ...th to ...th year (next … years) of operation from the date of commissioning of the equipment – To be supplied in …. lots within this cluster. Note - The combined period in years of (b), (c), (d) & (e) will depend on total contract duration and the nature of the equipment.

Table – B [If the bidder qualifies against sub clause -7.7.2 of clause - 7: Provenness criteria, Section II (ITB)]

Section V - Schedule of Requirements

Sl. No	Brief Description of Goods & Services	Quantity	Expected Delivery schedule at Site
1	YYYYYY	XX	-------- machines within _____ months from the date of Notification of Award to be supplied in First lot. Project wise Allocation: 1) ----------machines to ---------- 2) ----------machines to ---------- 3) ----------machines to ---------- On successful performance of all the machines supplied in First lot for one year from the date of commissioning, clearance to be obtained from order issuing authority for the remaining quantity to be supplied. In case of distribution of tendered quantity among more successful bidders under this clause, above delivery schedule shall be suitably modified at the time of conclusion of Contract on pro-rata basis. However, the commencement period for delivery will remain the same for each supplier. **After clearance of successful performance of the 1st Lot:** The delivery of first … nos of machines of remaining quantity within …. months from the date of clearance and balance machine(s) to be supplied thereafter @ at least …machines per ------ days/month. Priority allocation for the balance equipment will be indicated at the time of clearance. Adjustment to the excess supplies, if any, made against the above delivery schedule is admissible in case of subsequent short supplies.
2	AFDSS and other commissioning requirements as per Annexure – 7 of the NIT (contract), if any, and Ancillary Equipment for each equipment of Item 1 (above), as	In accordance with item 1	Delivery to be made along with the Machine.

	specified in Technical Specifications, Section-VI.		
3	Provision of spare parts; - Operational, Maintenance and Standby/Contingency spare parts, consumable items, wear materials, maintenance tools, special tools in accordance with Part C.6 of the Technical Specification, Section-VI. The cost of Spare Parts requirement shall be quoted separately for each project making allowance for the total quantity of equipment allocated to that project. All costs of Spare parts shall identify unit cost, total cost, costs incidental to delivery, building up to a total cost CIP final place of destination / FOR destination.	[10/15/21 /25] years as the case may be	To comply with the terms of part C.6 of Technical Specifications, Section VI and in consideration of Items 1 and 2 above. The delivery of spare parts and consumables should be made as follows: Consumable spares and consumables required for first 12 months of warranty period for the 1st Lot – to be supplied by the commissioning of the equipment. i) If the performance of the first lot of equipment is found successful, the delivery schedule of spares & consumables for 2nd year onwards for the equipment supplied in First lot shall be as follows:- a) Combined Spares and consumables required from 2nd to …h year (… years after completion of warranty period) of operation from the date of commissioning of the equipment - To be supplied in … lots within this cluster. b) Combined Spares and consumables required from ...th to ...th year (next .. years) of operation from the date of commissioning of the equipment - To be supplied in … lots within this cluster. d) Combined Spares and consumables required from ...th to ...th year (next … years) of operation from the date of commissioning of the equipment – To be supplied in …. lots within this cluster. e) Combined Spares and consumables required from ...th to ...th year (next … years) of operation from the date of commissioning of the equipment – To be supplied in …. lots within this cluster.

			Note - The combined period in years of (b), (c), (d) & (e) will depend on total contract duration and the nature of the equipment. (ii) The delivery schedule of spare parts and consumables for the remaining equipment shall be mentioned at the time of issue of clearance for supply of remaining equipment, which will be in line with the delivery schedule for spares and consumables given in Table A.

The quantities of equipment allocated to the mine projects are as follows:

Sl. No.	**Name of Project**	**Company**	**Consignee Address**	**Total Requirement**	
				Under NCD	**Under PCD**
1					
2					
	TOTAL				

Note:

1. Price for the equipment along with accessories and Spares & Consumables for the projects shown under NCD heading should be quoted with Normal Custom Duty (NCD).
2. Price for the equipment along with accessories and Spares & Consumables for the projects shown under PCD heading should be quoted with Project Concessional Duty (PCD) applicable for the imported contents, as per extant customs rules and regulations.

Delivery Terms

A) **In case of Import Order**: On CIP (Final Place of Destination) basis.

B) **In case of Indigenous Order**: On FOR Destination basis.

Delivery Schedule: Delivery schedule as indicated above, shall reckon from the date of Notification of Award. However, in case of order for equipment under PCD on Indigenous manufactures, delivery period will be counted from the date of registration of project with customs authorities, as per ITB clause-22.5.

In case of direct import, delivery shall not be linked with issue of PCD certificate.

Final Place of Destination / FOR Destination / Ultimate Consignee

Section V - Schedule of Requirements

The Projects indicated above are the Final Place of Destination/ FOR Destination for the purpose of delivery. The consignee mentioned therein is the ultimate consignee.

Part II

Sl. No.	Brief Description of Services	Period/Quantum
1	Training of Purchaser's Personnel at Project Site / Manufacturer's Training Facility available in India	Please refer to Schedule of Requirements of Services later in this Section and to the Technical Specifications (Section VI).
2	Assembly and erection of equipment at Site in accordance with the Technical Specification and Conditions of Contract.	To be specified by the Bidder to comply with the Technical Specifications (Section VI) and the terms and Conditions of Contract.

Schedule of Requirements of Services

The Supplier's scope of the Contract will include the following

I. Type test on each equipment included in the technical specification and offered in the bid.

II. Providing Services of Supplier's qualified engineer(s)/personnel for:

A. unloading, transportation to site, storage at site and/or

B. transportation from storage to erection site, installation, testing and commissioning.

III. Training of Purchaser's Personnel:

The Purchaser's estimates of the minimum training requirements within warranty period, (in terms of Purchaser's personnel, periods and locations) are given in the following table. These estimates relate to each equipment as specified in Part I

Training schedule per ***Project /*** *machine* (as per schedule of requirement)

Type of Personnel	***At Manufacturer's training facilities available in India***					***At Site***				
	No	***Period***		***Total***		***No***	***Period***		***Total***	
Mech Engineer			*weeks*		*weeks*			*Week*		*Week*
Elec Engineer			*weeks*		*weeks*			*Week*		*Week*
Mech Supervisor			*weeks*		*weeks*			*Week*		*Week*
Elec Supervisor			*weeks*		*weeks*			*Week*		*Week*
Mech Fitter			*weeks*		*weeks*			*Week*		*Week*

Electrician			*weeks*		*weeks*			*Week*		*Week*
Operator			*weeks*		*weeks*			*Week*		*Week*
Total					*weeks*					***weeks***

Definitions:

Mech/Elect Engineer- *Graduate Engineer having basic knowledge of the equipment*

Elect/Mech Supervisor - *Diploma Holder Engineer having basic knowledge of the equipment*

Mech Fitters/Electricians/Operators- *Un-skilled, semi-skilled and skilled.*

Note:- The training shall be completed in batches within warranty period from the date of commissioning of first equipment in the respective project.

IV. **Provision of additional training within the contract period after completion of warranty period.**

i. The bidder shall give confirmation in their bid to impart training to the CIL personnel, in addition to the contractual training provision, after completion of warranty period but at any time within the contract period.
ii. The additional training will be as per requirement of the user and shall cover the training scope same as per the mandatory training (within warranty period) of the contract.
iii. The training will be on chargeable basis and additional payment to the supplier will be made at the same rates which have been indicated for mandatory training.

Section VI - Technical Specifications

Technical Specifications
Preface - Instructions to Bidders

Introduction

These Technical Specifications identify the technical requirements of the Goods and Services which are the subject of this tender.
The Technical Specifications are presented in four parts as follows:

A. Scope of Supply
B. Specific Project Requirements
C. General Requirements
    1) Geography and Climatic Conditions
    2) Goods (Equipment and Machinery)
    3) Services
    4) Standards
    5) Supplier's Responsibility
    6) Spare Parts Provisions
    7) Availability Provisions
    8) Deemed Breakdown
    9) Composite Warranty / Guarantee
    10) Quality Assurance
D. Equipment Specifications

Technical Response

Bidders shall upload duly filled in Technical Parameter Sheet (TPS) strictly as per Clause by Clause requirement demonstrating compliance with the Purchaser's Technical Specifications, together with full supporting technical documents, literature and data sheets.

Failure to demonstrate compliance in all respects with the requirements of the Technical Specifications may render the bid non-responsive.

Wherever graphical representation of data (e.g. load, power, performance curve) is required, the grid axis and data shall be properly and clearly labeled for ready comprehension.

Additionally, Bidders shall provide the information specifically requested in the Attachment to the Technical Specifications.

Failure to provide any information requested in any part of this specification may deem the bid non-responsive.

Site Visits

The Bidder prior to making any Bid calculation and as part of the preparation of its Bid, shall be deemed to have visited and inspected the Site(s), made all enquiries and collected all

information documentary or otherwise, including climatic conditions, as considered necessary by the Bidder for the proper and accurate preparation of its bid.

A Bidder may visit the Site(s) by prior appointment with the purchaser. The number of Bidder's representatives permitted to make visits to the Site(s) shall be limited to a maximum of two. Bidders wishing to make appointments for Site Visits should do so in writing or by facsimile directly with the subsidiary company and concerned officer as detailed in the following schedule. Copies of all such communications should be sent to:

General Manager (MM) - HOD
Coal India Limited,
"Coal Bhawan",
Plot No. AF III, Action Area 1A
New Town, Rajarhat
Kolkata - 700 156
Telephone No. (033) ----------
Fax: (033) ----------
Email: ----------
Website: www.coalindia.in

Subsidiary Company	**Project**
---------- ---------- ---------- ---------- Fax: 91------- Tel : 91---------- Attention : General Manager (Excv)/HOD	1. xxxxx 2. yyyyy

Part A

Scope of Supply

A.1 Equipment Package

The Supplier is required to provide a complete package of equipment for the supply of ---------- to opencast (surface) coal mining projects as per the Technical Specifications provided in Part D.

The supplier is required to supply the equipment along with accessories, consumables, training, installation, commissioning and testing at the coal mining project.

The package also includes Consumable Spares and Consumables including oils, greases, lubricants, all GETs for 12 months of warranty period from the date of commissioning of the equipment and thereafter Spares & Consumables for a period of [9 years for Hydraulic Shovels upto 15 CuM Bucket Capacity, 14 years for Hydraulic Shovels of 20 CuM Bucket Capacity, 21 years for 20 CuM Electric Rope Shovels and 24 years for 42 CuM Electric Rope Shovels].

For Electrical Rope Shovel and Electrical Hydraulic Shovel, 300Mtr trailing cable and suitable Field Switch as per Technical Specification mentioned in Clause ……. of Part D, shall be supplied initially along with the equipment as commissioning item.

The Scope and Phasing of supply for the ---------- is given in Sec. V.

A.2 Supplementary Items

The equipment shall be provided with a comprehensive tool kit which shall include any special tools required for erection and commissioning of equipment.

A.3 Information and Drawings

At least one month before the scheduled installation date, the Supplier shall provide not less than:

(a) Suitably illustrated copies of Operating, Repair and Maintenance Manuals for each type/model of equipment and accessories, written in English language, substantially bound in book form;

Three (3) copies to each project site; and

Soft copy of the same to the General Manager (Excv.)/HOD, Subsidiary Hqrs. and General Manager (EED), Coal India.

(b) Suitably illustrated copies of detailed Spares Parts Manuals for each type/model of equipment and accessories, written in English language, substantially bound in book form;

Three (3) copies to each project site; and

Soft copy of the same to the General Manager (Excv.)/HOD, Subsidiary Hqrs., General Manager (EED), Coal India; General Manager (MM)/HOD subsidiary Hqrs and General Manager (MM)/HOD, Coal India.

In addition to the Equipment drawings, where appropriate the Supplier shall supply detailed drawings (in the same number of copies) illustrating erection/assembly site(s), foundation and accommodation requirements for such items as drive motors, switch installations etc.

A.4 Erection/Assembly, Commissioning and Performance Testing:

The Supplier shall provide the Services of Specialist Technicians (refer Part – C.3) and required manpower (skilled/semi-skilled/unskilled) to undertake the installation/erection/assembly, commissioning and any performance testing of the plant, Equipment and accessories supplied.

The technicians shall remain at site following commissioning and train all necessary personnel to make them conversant with the maintenance and operation of the equipment.

A.5 Training:

The training shall be completed in batches within warranty period from the date of commissioning of the equipment in the respective project**.** The supplier in consultation with the project in-charge / HOD [Excavation] of the respective site shall make available experienced personnel to conduct training of engineers, supervisors, technicians and operation personnel for specified period as mentioned in table given in 'Schedule of Requirement of Services' from the date of issue of acceptance certificate of the equipment. The training shall cover the following:

a) Training on simulator module by the bidder at their works/suitable location in India/suitable end user's location is mandatory.
b) Equipment system, safety and risk assessment.
c) Equipment operation and maintenance.
d) Trouble shooting, localization of fault and their remedies covering:
    1. Electrical and electronics
    2. Mechanical
    3. Hydraulic system
    4. Lubrication system
    5. Pneumatic system etc.
e) Training on maintenance of OEM bought out systems, e.g., engine, transmission, hydraulic aggregates / system, electrical drives system etc., by the manufacturer of the system.
f) Training on Digital system of the equipment including OBD (on board display) and communication port data management, Health and productivity management system of the equipment.

Comprehensive training manuals with clear illustration shall be provided to each participant in English language. The training courses shall be conducted in both English and Hindi language.

Details of purchaser's estimates of the minimum training programme required for total number of equipment is described in Sec-V.

A.5.2 Additional training within the contract period after completion of warranty period

(a) The bidder shall give an undertaking in their bid to impart training to the CIL personnel at any time within the contract period after completion of warranty, in addition to the compulsory training as per provision of clause A.5.1.

(b) The additional training will be as per requirement of the user and the scope of training will be same as per the compulsory training provision of clause A.5.1.

(c) The training will be on chargeable basis and additional payment to the supplier will be made at same rate what individual supplier will be charged for compulsory training.

Part B

Specific Site Requirements

B.1 Project Specific Requirements

The equipment shall be suitable for use at the specific site projects under the conditions detailed below.

B.1.1 _____ (Name of the project)

The ---------- Opencast Project is owned by the ------(name of subsidiary company), a wholly owned subsidiary of Coal India Limited (the "Purchaser"). The mine is located partly in the ------District of ---------- approximately ----- Km from ---------- railway station.

Geological Conditions

(Soil & Sub soil condition to be indicated)

Power Supply

The Project will receive power at (…….. KV through the …… Sub-station of the ……..)

Mine Water Quality

(PH ……)

Total Suspended Solid {…….(mg/ ltr.)}

Water Supply

Linked to the ……..

Part C

General Requirements

C.1 Geography and Climatic Conditions

Elevation:-

The natural surface varies from 100 to 1000 m above mean sea level.

Climate:-

The climate of the coal mines, where the equipment will be deployed, is sub-tropical to tropical, dusty, with a hot and humid atmosphere. Monsoon rains occur in the period from June to October.

Ambient Conditions:-

Relative Humidity - Maximum 98%

Temperature - Minimum 0^{o} C

Maximum 50^{o} C

Rainfall:- The mean annual rainfall is 1,000mm - 1200mm, 90 to 95 % of which may fall in rainy season from June to October.

Wind:- April to September - South to South Westerly

October to March - North Westerly

Speed:- - 8 km per hr average

- 100 km per hr maximum

C.2 Goods (Equipment and Machinery)

Detailed specifications of the Equipment to be supplied are given in **Part D** of this section.

In general, all items shall be:

- New, unused, of the current design [incorporating latest proven features] and not likely to be discontinued or become obsolete during the lifetime of the equipment.
- Designed and constructed to handle without overload and for the working hours stated, the maximum volumes/rates specified;
- Designed to facilitate ready access, cleaning, inspection, maintenance and repair of component parts;
- Designed to facilitate rapid changeover of consumable items.

The supplier shall ensure that suitable latest technology available worldwide as on date shall be adopted in the quoted model of equipment and shall not be discontinued during life time of equipment. However, in case, technical up-gradation is unavoidable the same may be adopted in the supplied model of equipment with due clearance of Head of Excavation department of Subsidiary Co. Supplier shall not seek any technical modification / up-gradation at the cost of

buyer before completion of … years from the date of completion of guaranteed availability contract period of the equipment except, when any modification / up-gradation is required for compliance of any statutory guideline issued from regulatory body of Govt. of India, DGMS, State Authority etc.

The component parts of all items shall, wherever possible, be selected from the standard ranges of reputable manufacturers and bidder shall disclose the manufacturer's name of all such items in their bid.

The Equipment and accessories shall be physically robust and where necessary capable of dismantling for transportation and ready re-assembly using simple tools. All Equipment items provided shall be designed to be compatible within the proposed overall Scope of Supply.

Electrical Equipment shall provide all protection devices, controls and interfaces for the Equipment to operate safely and efficiently.

All workmanship and materials shall be of first class quality in every respect.

All parts and surfaces, which are exposed to corrosive environment, shall be suitably protected to prevent any effects of corrosion or erosion.

C.3 Services

The supplier shall be responsible for the erection and commissioning of the equipment at site for which the supplier shall depute qualified and competent Engineer(s) and specialist technicians.

C.4 Standards

The design, supply, erection, testing and commissioning of all Equipment under this Contract shall in all respects comply with the requirement of this specification and with the appropriate current Indian standards and codes, or relevant Standards issued by the International Standards Organisation or any other equivalent international standards, which corresponds to specific ISO/Indian standards indicated in the technical specification. Such equivalent international standards are to be supported by documentary evidence certifying that offered standards are identical to the corresponding ISO/Indian standards.

The equipment shall comply with requirements of the statutory government authorities, including Director General of Mines Safety (DGMS) having jurisdiction over the equipment and its use.

The system of units for all measurements shall be the **Système International (d'unités) (S.I.)**

C.5 Suppliers Responsibility

The Purchaser requires that the Supplier shall accept responsibility for the provision of complete operable and compatible Equipment and systems within the Scope of Supply. This document identifies only the major items required for the installation and the Supplier shall ensure that the total supply includes all necessary Equipment for it to function effectively, safely and efficiently. Any additional items the Supplier considers necessary to ensure compliance with such a requirement shall be identified and included.

If the Supplier observes that this Specification document contains any anomalies, ambiguities, flaws, errors or omissions, the Supplier shall immediately bring these to the attention of the Purchaser in the Pre-Bid.

The Supplier shall be responsible for the testing and commissioning of the Equipment and ensure that it meets the requirements as specified. The commissioning and setting to work of the whole Equipment Supply package shall be carried out by the Supplier in conjunction with the Purchaser's nominated personnel.

C.6 Spare Parts Provisions

C.6.1.a. Availability of Spare Parts

All items and Equipment proposed shall be of current design and manufacture. The Supplier shall warrant that sufficient spares and servicing facilities will be available to maintain the Equipment in use throughout its life.

C.6.1.b Bought-out assemblies and sub-assemblies

The supplier is required to furnish the details of all Major bought-out items as indicated in the technical specification against "Information to be provided by the bidder" including major components sourced from the principal manufacturer in case of collaboration agreement etc.

C.6.2 Provision of Spare Parts

C.6.2.1 Within the Contract Price, the Purchaser shall agree to purchase all Operational, maintenance and standby/contingency spare parts, consumable items, wear materials, maintenance tools and special tools (hereinafter collectively referred to as "Spare Parts", unless the context requires otherwise) in accordance with the Supplier's recommendations [for … years for -----(Equipment type)----] from the date of issue of the Commissioning Certificate. Similarly, within the Contract Price, the Purchaser shall also agree to purchase consumable items (hereinafter referred to as "Consumables") in accordance with the Supplier's recommendations for [for … years for -----(Equipment type)---] from the date of issue of the Commissioning Certificate. The schedule of supply of spares and consumables shall as indicated in Schedule of Requirement, Section-V. In addition the Supplier shall provide Spare Parts and Consumables for Commissioning.

Consumables shall include items such as oils, lubricants and fluids also. Trailing cable is not included in consumables.

The supplier shall submit … separate schedules showing spare parts and consumables proposed to be supplied by them in the 1st (twelve) months period, cluster-wise for 2nd to …th year, …th to …th year, …th to …th year and …th to …th year for each equipment from the date of commissioning of equipment in order as per 'Schedule of Requirement' to comply with the provisions herein contained.

C.6.2.2 In the event that the spare parts and consumables, as recommended by the Supplier, in any way fall short of actual requirements during the period for which they are said to be adequate, the supplier shall provide such additional spare parts and consumables as are necessary at the final destination. Such additional spare parts and consumables shall be

provided by the Supplier to the Purchaser free of all cost and shall be transported to Site by air freight internationally and by air, rail or fast road transport within India.

C.6.2.3 In the event that the spare parts, Insurance items and consumables, as recommended by the Supplier, are in excess of actual requirements, the Purchaser will require the Supplier to repossess or repatriate or otherwise dispose of such excess spare parts and consumables of the cluster in exchange for payment to the Purchaser of the Contract landed Price (with taxes and duties) of the spare parts and Consumables concerned.

The Purchaser shall notify the Supplier, in writing of its requirements under this Clause within thirty (30) days of completion of the period of each cluster referred to in Clause C.6.2.1 hereof.

C.6.2.4. In the event that operation of the Plant is inhibited or frustrated as a direct result of lack of spare parts and consumables, pursuant to Clause C.6.2.2 hereof, then the period referred to in Clause C.6.2.1 hereof shall be extended by a period of not less than the period during which operation as aforesaid was inhibited or frustrated.

C.6.2.5. The supplier shall not be liable for the supply of additional spare parts and consumables, nor to extend the period referred to in Clause C.6.2.1 hereof, if and to the extent that, additional Spare Parts and Consumables are required by reason of unforeseen accidents, negligence or misuse on the part of the Purchaser or actual working hour exceeds the total expected hours as mentioned in clause C.6.2.6 .

C.6.2.6 The assessment of the Supplier of the spare parts requirements shall be based upon the expected working hours per year as defined in the individual Equipment Specifications included in the Technical Specifications.

In accordance with the provisions of clause 8, Part - D of the technical specifications the expected working hours per annum are **** (*** thousand) hours. The expected average working hours per annum as indicated are only approximate hours and may vary $\pm$ 500 hours. Total duration of contract will be … years irrespective of working hour. In case, actual working hour exceeds ***** (**** x **) hours during the tenure of (1+**) years contract period, then consumable items (as declared by the bidder in the offer) will be arranged by the purchaser.

C.6.3. **Emergency Spare Parts**

C.6.3.1. Emergency spare parts required by the Purchaser to repair breakdowns shall be dispatched to the site by the Supplier by the fastest, practicable means as directed from time to time by the Purchaser.

C.6.3.2. For the purpose of Clause C.6.2.6, "Emergency Spare Parts" shall mean those spare parts or components required by the Purchaser to repair any item of Plant supplied pursuant to the Contract in the event of a breakdown not attributable to a failure covered by guarantee or a failure of the Supplier to provide adequate Spare Parts or Consumables.

C.6.3.3 Payment in respect of the supply and delivery of such Emergency Spare Parts shall be made promptly, retrospectively, by the Purchaser, in a manner consistent with the terms of payment described in the contract.

C.6.3.4 **Lifetime Spare Parts**

The Supplier undertakes and guarantees to produce and maintain stocks, to be available for purchase by the Purchaser under separate agreement, of all Spare Parts and

Consumables as may be required for maintenance and repair of the Plant throughout its working life. In the event that the Supplier wishes to terminate production of such Spare Parts, the Supplier shall:

(a) give not less than six months' notice in writing of its intention to terminate production in order to permit the Purchaser reasonable time in which to procure needed requirements; and

(b) immediately following termination, provide to the Purchaser at no cost, manufacturing drawings, material specifications and all necessary permissions to facilitate manufacture of the Spare Parts elsewhere.

(c) any change in part number or superseded part number should be informed to the HOD of Excavation department / MM department of subsidiary hqrs. and the project site wherever the equipment is operating.

In any event, the Supplier shall not seek to terminate manufacture of spare parts for a period of not less than (….) years from taking over or the life time of the equipment whichever is later.

C.6.4 Oils, Lubricants and Fluids

The Supplier shall provide to the Purchaser a detailed schedule of all necessary oils, lubricants, fluids for the operation and maintenance of Equipment. The schedule shall indicate estimated annual consumption and specify the appropriate international standard number or the name and reference number of an equivalent available in India considered to be acceptable by the Supplier.

C.6.5 General

C.6.5.1 Nothing in this Clause C.6 shall relieve the Supplier of any Guarantee, Availability, Performance or other obligations or liabilities under this Contract.

C 7 Guaranteed Availability Provisions [to be indicated under Clause No. ------ of Equipment specifications of individual equipment]

Sl. No.	Equipment	Minimum Annual Guaranteed Percentage Availability			
1	**ER Shovel**	**Warranty and 1st Cluster**	**2nd Cluster**	**3rd Cluster**	**4th Cluster**
	42 CuM	85% (1st to 6th yr)	84% (7th to 12th yr)	83% (13th to 18th yr)	82% (19th to 25nd yr)
	20 CuM	85% (1st to 6th yr)	84% (7th to 11th yr)	83% (12th to 16th yr)	82% (17th to 22nd yr)
2	**Hydraulic Shovel**	**Warranty and 1st Cluster**	**2nd Cluster**	**3rd Cluster**	
	Above 15 CuM	85% (1st to 5th yr)	84% (6th to 10th yr)	83% (11th to 15th yr)	
	Above 10 CuM to 15 CuM	85% (1st to 5th yr)	84% (6th to 10th yr)	NA	

C.7.1 Introduction

C.7.1.1 The Supplier shall guarantee that the Equipment supplied pursuant to this Contract shall be available for use by the Purchaser and shall meet the performance criteria specifications at the level and in accordance with the terms and conditions of the Availability Guarantee herein contained.

C7.1.2 Where Equipment supplied under the Contract fails to meet the criteria of the Availability Guarantee, the Supplier shall, at its own cost, provide suitably qualified and experienced personnel at Site to demonstrate to the Purchaser's satisfaction that the required level of availability can be achieved and maintained.

C.7.1.3 The Supplier shall provide the Services of such personnel at Site within seven (7) days of notification by the Purchaser that the availability criteria have not been met in any one (1) month.

C.7.2 Guarantee

C.7.2.1 The Supplier shall guarantee that the Equipment supplied pursuant to the Contract shall be available to the Purchaser at the level hereinafter defined to perform to criteria of not less than that defined in the Technical Specifications incorporated in the Contract.

C.7.2.2 The Supplier shall guarantee that the Equipment shall be available to perform its duty to minimum criteria and to the minimum availability percentage level as defined in the individual Equipment specifications included in the Technical Specifications.

The method of assessment applied shall be as follows:

Method of Assessment:

The following calculation shall determine the availability of the Equipment:

$$\textbf{\% Availability} = \frac{\textbf{Scheduled Available Time - Downtime}}{\textbf{Scheduled Available Time}} \times 100$$

Scheduled Available Time shall equate to 24 hours daily.

Downtime:-

Downtime shall mean all hours of work lost due to mechanical, electrical or other failure, including:

a) routine servicing and maintenance in accordance with the manufacturer's published recommendations, including :

changing oils, oil filters and air filters; lubrication; changing identified consumable or wear parts.

b) planned preventative maintenance programs;

It shall not however include:

I. damage due to abusive use or incorrect operation methods by the purchaser;

II. accidents;

III. strikes or stoppage of work by the Purchaser's personnel;

IV. natural disaster;

V. lack of Spare Parts not attributable to a failure of the Supplier.

Note – For (I) & (II), a joint inspection report will be prepared with supplier within 3 days from the date of occurrence of incident and repairing works will be done in consultation with supplier

Downtime shall also specifically include all hours lost due to failures determined to be guarantee failures.

The Supplier shall provide a schedule of maintenance required to carry out (a) and (b) above for the first … years of operation and shall state the number of hours required to carry out each maintenance task. The time stated shall, with the agreement of the Purchaser, form the basis of the assessment of the availability.

This schedule of tasks and time will be reviewed periodically by the Purchaser and the Supplier, jointly, to monitor the practicality of the schedule.

The Purchaser will assist the Supplier, without relieving the Supplier of any other obligations under the Contract, to achieve the guaranteed availability by:

1. Providing normal and proper maintenance, including preventative maintenance in accordance with the Supplier's standard/published recommendations, and making all necessary repairs using only spare parts provided by the Supplier in accordance with the requirements specified in part C6.
2. Providing co-operation to all Suppliers' authorised representatives, complying with all reasonable procedural suggestions to improve efficiency of machine operation or reduce downtime.
3. Where appropriate, providing and maintaining such conditions as:
   - Proper Electrical Supply
   - Terrain Area
   - Bench Preparation
   - Reasonable Floor Conditions
4. Providing all Suppliers' authorised representatives access at all reasonable times to the machine service and repair facilities.
5. Maintaining a logbook for each shift wherein the working hours, breakdown hours, maintenance hours, idle hours, etc. shall be recorded. This record will be available for examination and signature by the Supplier's representative.

C.7.3 Effect and Duration of Guarantee

C.7.3.1 This Guarantee shall become effective on the day on which the Equipment is commissioned at the Site. Commissioning shall be evidenced by the issue of the Purchaser's Acceptance Certificate.

C.7.3.2 This guarantee shall remain effective for [… years] from the date of commissioning irrespective of the hours operated by the Equipment during the period of the guarantee.

C.7.3.3 Compensation for not achieving Guaranteed Availability

In the event that Equipment fails to achieve the Availability herein provided, measured over each twelve (12) month period, the Supplier shall be liable for and pay to the Purchaser, as liquidated damages, a sum equal to as indicated hereunder for each equipment against the PBG submitted by the bidder as per clause-2 of SCC

a. 1% of the delivered landed price of the equipment including the average price of spares & consumables for the year in which the machine could not achieve guaranteed availability for reduction in every percentage or part thereof from the Guaranteed Availability for the first 5%.

b. 10% of the delivered landed price of the equipment including the average price of spares & consumables for the year in which the machine could not achieve guaranteed availability for reduction beyond 5% from the guaranteed availability.

Note : i) The average price of spares & consumables for a particular year will be worked out by dividing the total price of the cluster by the no. of years in that cluster

ii) Whenever deductions for unsatisfactory performance of equipment are made within the tenure of the PBG, the amount deducted from the PBG should be replenished within a month in order to ensure that the original value of the PBG remains the same.

C.8 Deemed Breakdown

When the supplier is unable to supply the replacement of a failed part during the contract period, and if the machine is commissioned by using the spares from the stock of the project, the period after 21 days till the supplier replaces the part shall be treated as 'deemed breakdown' (the credit for keeping machine available shall not be given to the supplier.)

The supplier shall not in any way be allowed to take out spare parts from other equipment, which are under breakdown and covered within the scope of this contract. However, CIL, in the interest of work, reserves the right to advise the supplier to commission the breakdown equipment covered under this contract by taking out spare parts from other breakdown equipment. Nevertheless, during this period also, the equipment shall be treated as 'deemed breakdown' till the supplier replaces the spare parts.

C.9 Composite-warranty/guarantee

The supplier shall warrant that the equipment supplied under this contract is:

a) In accordance with the contract specifications.
b) The equipment shall have no defects arising out of design, material or workmanship & the complete equipment shall be warranted for 12 months from the date of commissioning. Any defect arising observed on this account will have to be attended immediately.
c) The supplier must ensure that there is no major breakdown due to manufacturing / design defects during the warranty period. In case such breakdown occurs, the purchaser reserves the right to extend the warranty period suitably.

The warranty shall cover for total equipment so that comprehensive responsibility lies only with the equipment supplier although components may be supplied by different suppliers to the bidder.

C.10 Quality Assurance

C.10.1 The Supplier should furnish in detail its quality assurance plan for various stages of manufacture. The quality assurance plan shall be of the manufacturing plant where the bidder proposes to manufacture the equipment. The Quality Assurance plan shall comply with an internationally recognized quality assurance standard such as ISO 9000 or its equivalent.

C.10.2 The Supplier shall provide facilities to Purchaser or their authorised representatives for progress inspection during manufacture at his works and furnish all test data available in this regard for quality control, both for bought-out items and his own manufactured items.

C.10.3 The Purchaser or his agent, when so required by him, shall also be provided with samples of "bought-out" materials for the purposes of undertaking independent tests, which independent tests shall be at the expense of the Purchaser.

PART D: - EQUIPMENT SPECIFICATIONS

EQUIPMENT SPECIFICATION OF 42CuM ELECTRIC ROPE SHOVEL

1. Scope of specification:

This specification is intended to cover the technical requirements for the design, manufacture, testing, delivery, on site erection and commissioning of a self-propelled, crawler mounted, Electric Rope Shovel of 42CuM dipper capacity having bottom dischargebucket, conforming to relevant SAE/equivalent standard.

2. References:

The following International Standards as per latest amendment are referred to in, and form part of, the Specification. The superseded or equivalent standards, if any, to any of the following ISO standards if offered are to be supported by documentary evidence in form of copies of the equivalent standards certifying that offered standards are identical to the corresponding ISO standards of NIT.

ISO 2867	Earth-moving machinery - Access system
ISO 3457	Earth-moving machinery - Guard and Shields- Definitions and specification
ISO 6682	Earth-moving machinery - Zones of comfort and reach for controls.
ISO 6405-1	Earth-moving machinery - Symbols for operator controls and other displays - Part 1 : Common Symbol
ISO 6405-2	Earth-moving machinery - Symbols for operator controls and other displays - Part 2 : Specific symbols for machines, equipment & accessories
ISO 7000 / IEC60417	Graphical symbols for use on equipment
ISO 6750-1	Earth-moving machinery - Operator's Manual - Part1 : Contents & Formats
ISO 6750-2	Earth-moving machinery - Operation and Maintenance - Operator's Manual - Part2 : List of references
ISO 10968	Earth-moving machinery - Operator's control
ISO 20474-1	Earth-moving machinery - safety - Part1 : General requirement
ISO 20474-12	Earth-moving machinery - safety - Part12 : Requirement for cable excavators

Other ISO standards mentioned in the specification of individual system of the equipment

3. Design Criteria:

The shovel shall be capable of continuous digging for protracted periods on a system of 03 (three) shifts each of 8hrs duration per day throughout the year in hard, highly abrasive sandstone/ rock having average density of 1800 kg/ cum after blasting.

The ER shovel 42CuM shall be suitable for 2:1 heaped loading of rear dumpers with capacities ranging from 240T to 265T. The shovel shall have the following working ranges:

a. Maximum cutting height	not less than 15.50 m
b. Maximum cutting radius	not less than 23.00m
c. Maximum dumping height(Door open)	not less than 8.50 m
d. Dumping radius at maximum height	not less than 18.00 m
e. Dumping height at maximum radius	not less than 6.50 m

4. **Mechanical Specification:**

4.1 Dipper:

The rope shovel shall be supplied with a hard faced, heavy-duty bottom discharge rock dipper of 42 CuM capacity as defined by the Society of Automotive Engineers (SAE) rating/equivalent standard.

The specific weight of steel used in construction of bucket shall be not less than 7800 kg/ cum.

All consumable items of the bucket, including tooth points, shanks/ tooth adapters etc. are to be supplied along with the dipper. The tooth points, shanks, etc. should be wear resistant / hard faced and should have proper, durable, easily removable and shock absorbing type attachment with the dipper. The latch bar and lever should be of heavy-duty type.

4.2 Boom & Dipper Handle:

The shovel boom and dipper handle should be rugged, durable construction of high strength impact resistant low alloy steel and free from any stress concentration. The design must take care of all forces i.e. bending, torsion, compression etc. encountered during operation of the shovel. Shock absorbers shall be incorporated in the boom to absorb the impact of the dipper or suitable arrangement shall be provided to absorb the shock and prevent dipper hitting the boom. Stoppers of suitable strength to be provided at the other ends of dipper handle.

4.3 Boom Point Sheaves:

The boom point sheaves shall be large of rugged construction, and mounted on low maintenance, anti-friction bearings / bushings, having auto lubrication facility.

Walkways with handholds shall be provided to allow easy access to the boom point sheaves.

4.4 Crawler Mounting:

Crawler frames shall be heavy welded box section design with bolted fit to car body. The crawler side frames and load rollers shall be of sufficient strength to withstand the high loads,

which may occur due to uneven ground conditions. They shall be of welded construction and preferably stress relieved.

The drive sprocket should be a single piece / segmented type and a reliable track tensioning arrangement should be provided. The front idler, load rollers, rear idler shall be mounted on low maintenance, anti-friction bearings/bushings. Crawler shoes shall be heavy duty and designed for ease of replacement whenever necessary.

4.5 Lower Frame:

The lower frame shall be a single unit of heavy welded high strength low alloy steel structure construction, designed to withstand repeated high loading under difficult digging conditions.

Suitable means of access with removable covers shall be provided for ease of maintenance.

The roller circle shall have lubricated rollers and be fitted with sealed bearings/bushings or are lubricated with open gear lubricant.

The ring gear shall be of high alloy steel for optimum wear resistance.

4.6 Propel:

An independent propel system for each track shall be provided, allowing for counter rotation. Propel brakes shall be provided to stop the machine during any travelling condition and shall be interlocked with the travel controller to prevent travel until the brakes are released.

4.7 Revolving frame:

The revolving frame shall be strong rigid unit of heavy section good quality high strength alloy steel. The design and manufacture of the frame must ensure proper and uniform load distribution. Suitable machined pads should be provided along the frame of mounting and aligning the various drive units and other accessories.

Mounting lugs for the boom and gantry should preferably be provided for the required counter-balance weight.

Ballast boxes of sufficient size and proper design shall be provided for required counter balance. The ballast shall be of cast iron ball / grinding media having diameter range as per design requirement.

The purchaser (concerned subsidiary) shall provide the ballast in time to avoid the delay in commissioning.

4.8 Machinery House:

The machinery house shall be made of steel sheet supported by a steel structure and shall cover the entire machinery deck. It shall be fitted with a filtered pressurized air system for ventilation, cooling and to prevent entry of dust into the machinery house with auto reversing fan to vent out

dust accumulated in the filter avoiding manual intervention. The machinery house shall be designed to give ready and safe access to personnel and equipment for inspection and maintenance. In particular, sufficient space shall be provided around all main drives and sub-assemblies for ease of inspection, maintenance and removal. Roof panels shall be strategically located to direct crane picks of major deck mounted components as required.

Rollers or suitable arrangement shall be provided as rope guides at the entrance to the machinery house for all ropes to prevent any abrasion and damage.

Inspection covers shall be provided on all gear-cases.

Non-slip type walkways and catwalks with handrails shall be provided in and around the machinery house, the operator's cab and service platforms shall comply with ISO 2867.

4.9 Main Machinery:

All gears and shafts shall be manufactured from high quality steel and mounted in anti-friction bearings.
Gears and pinion should be suitably heat-treated.

Inspection covers shall be provided on all drive gear-cases.

All functions, such as Crowd, Hoist, Swing and Propel shall be provided with 'ON' type brake so that the brakes are applied automatically, in case of electrical power failure. All main drive motors shall be equipped with disc type brake.

4.10 Air Compressor:

Air compressor of sufficient capacity with all required safety features shall be provided.

Test certificate of the air tank as per DGMS requirement to be submitted before commissioning.

4.11 Lubrication:

A centralized PLC based electrically operated, double / single line (as per manufacturer system design) automatic lubrication system shall be provided to service all lubrication points on the machine, including those points where use of high viscosity lubricants is required.

The lubrication system shall be fully monitored to ensure adequate lubricant flow is maintained to all points of major parts. The monitoring system shall, wherever necessary, be interlocked with the relevant control circuits to prevent damage due to lack of lubrication at any point. Alarms and indications for failure of lubrication system shall be provided and shall be repeated on the instrument/ test panel.

Lubricant containers of adequate size shall be located in a separate room/enclosure inside the machinery house and be large enough to cater lubrication needs for continuous operation between refills. Sufficient numbers of suitable capacity lubricating pumps shall be provided.

The containers shall be fitted with suitable arrangement for cleaning and refilling or replacement with fresh new barrels.

All lubrication lines and injectors shall be protected from damage. Location of all injectors shall be such that these can be conveniently inspected and repaired. The lubrication lines to the boom point should be properly guided. Flexible lines shall only be used where there is relative movement between parts and for final connection to movable components. Preferably steel piping shall be used for long runs and shall terminate in steel junction blocks or rigidly mounted bulk head connectors to prevent disturbance to steel piping when flexible hoses are replaced.

Fire/heat resistant/ retardant hydraulic hoses shall be provided in lubrication system. The vent valve on the top of hydraulic tank, if provided, shall be able to be removed without any tool. Lubricants recommended shall be of reputed make with Indian equivalent, if available.

Suitable motorized and manual Transfer Pumps as per requirement shall be provided for transferring each type/grade of lubricants.

4.12 Operator's Cab:

A fully insulated, high-visibility, rigidly mounted, sound-suppressed, vibration-suppressed, air conditioned, operator's cab with tinted safety glass should be so positioned to facilitate a clear and unrestricted view of the travel & work areas of the machine necessary for its intended use. The performance criteria shall be in accordance with ISO 5006. The sound level inside the cab shall be below 80dBA while the equipment is operating, and with the door closed. All operating controls, all monitoring, working signals and emergency power isolation switch to trip the field switch should be conveniently located in consoles within easy reach of the operator and shall comply with ISO: 6405-1, ISO: 6405-2, ISO: 6682 & ISO: 10968. The operator's cab shall be provided with an emergency exit gate in addition to primary access path to the cabin.

The operator's seat shall be ergonomically designed suspension type, which can be adjusted for operator's height and weight. The seat shall provide vertical and fore / aft adjustment to allow custom fitting of the joysticks to individual operators for ease of operation. Seatbelt for operator with reminder shall be provided. The console shall have features an expandable media mounting post to which the Graphic User Interface (GUI) is mounted. The GUI shall have menus and information screens that allow the operator to display necessary basic information and perform various operation functions. Side / rear vision cameras shall be provided in the machine with remote display in operator's cab. The camera system shall also cover all the blind spots.

The air conditioner shall be heavy duty off-the-road equipment application type. The climate control ducting in the cab shall be located above and/ or below the operator. There should be controls to allow regulation of air flow and auto - defrosting arrangement. A cooling fan and a blower type heater shall also be provided.

Horn / Alarm shall be provided on both outer sides of revolving frame, which shall be operated from operator's cab.

There should be a two-way communication system between operator's cab and the machinery house.

4.13 Guards & Shields:

Adequate guards and shields, which comply with ISO 3457, shall be provided throughout the shovel.

4.14 Boarding Ladders:

Boarding ladders shall be provided on the both sides of the machinery house.

The ladders shall be equipped with suitable interlock so that when the ladder is put/pull down, the interlock switch shall control the propel and swing mechanism to prevent any rotational or travel movement of the equipment for safety of site people.

4.15 Fire Extinguishers:

An adequate number of fire extinguishers shall be provided at strategic points on the shovel, suitably mounted in heavy-duty brackets for ease of removal.

The extinguishers shall be both dry chemical powder (DCP type) and CO_2 type with a minimum capacity of 5 kg and shall comply with Indian Standard IS: 15683 with latest amendment.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for fire extinguisher including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013. Periodical refilling is to be done by the supplier.

4.16 Fire Detection and suppression system:

A suitable automatic fire detection and suppression system of reputed manufacturer (indigenous or imported), shall be provided on the equipment complying DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.

- Automatic fire detection and suppression system suitable for fire class A, B & C inside machinery house & below Deck of shovel.
- Bidder requires submitting a schematic drawing indicating Plan of the system with relative position of items to be protected from fire.
- Fire detection and suppression of fire may be either total gas flooding or dry chemical powder base spray through nozzle strategically through an actuation cartridge, located to the targets, or combination of the two.

- Fire suppression agent used in neighborhood of electrical appliances shall be clean and shall not damage electrical / electronic component.
- Fire suppression system shall be non-hazardous & safe for human and environment friendly. It should have quick cleanup and environmental sustainability.
- The sensor shall send the signal to the control unit integrated with a LED and/or alarm indicator to show the status of the detector.
- The system shall operate only in active fire zone and suitably designed to extinguish the fire as per class of fire (A, B & C) of that location.
- The system shall be actuated automatically by detection of fire and control unit to be installed within the Operator's cabin for automatic system operation.
- The system shall also have provision of actuating manually.
- The system shall provide facility for self-checking /testing/inspection without operating.
- The data regarding health & event shall be logged in the system with date & time, which can be downloaded to PC/ Laptop in latter stage with memory capacity to store data of at least 15days.
- The system should be capable for efficient operation in the extreme mining conditions with dust, dirt, water & vibrations.

The high pressure storage vessels and hoses, if used with fire- fighting and fire suppression systems, shall conform to the requirements stipulated in the relevant Indian standards.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for AFDSS including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013.Periodical refilling is to be done by the supplier.

5. Electrical Specification

5.1 Power Supply:

The electrical power supply to the machine will be 6.6 kV ($\pm$ 10 %), 50 Hz ($\pm$ 3 %), 3 phase. This will be provided via a flexible trailing cable from the mine electrical distribution network.

All high-tension electrical equipment in the shovel shall be capable of withstanding 12 kV switching transients to protect against a rise in potential across any one phase of the supply. This protection shall be provided in the shovel by suitable means preferably either by providing Lightening arrestor of requisite class or with the help of surge suppressor or combination.

In addition suitable arrangement shall be made in the field switch to trip at specific over/under voltage condition. Surge suppressors are also to be provided in the field switch as additional protection.

The supply shall be connected to machine via minimum four collector rings of adequate capacity.

A high voltage distribution switchboard shall be provided to supply the various machine drive, control and auxiliary sub-circuits. Each switch forming part of switchboard and /or controlled HV Motor and Transformer shall be fed from an on-load isolator, an electrically closed and tripped, vacuum circuit breaker / contactor and an appropriate control push buttons as per provision of Indian Electricity rule 1956 & DGMS requirement. Auxiliary Transformer to be fed from a fused HV grounding isolator. Indicators such as Main on, blown fuse indicator, PF meter, voltmeter, ammeter, elapsed time meter, start & stop button, emergency trip and alarms shall be provided.

5.2 Drive system:

AC electrical drive system shall be provided for motion control of the shovel. The AC drive system must be of latest established design, so that all the functions of the equipment i.e. Hoist, Crowd, Swing and travel / propel operation have optimum output with high mechanical efficiency, low maintenance cost and improved maintainability and component life. The drive shall be IGBT based VVVF active front end type drive or of equivalent / higher technology.

All motions of the machine shall be controlled by a variable torque/speed drive control system. The Supplier shall specify the proposed method of drive control, which is expected to utilize modern electronic techniques. The design of the drive system should ensure that in the event of any failure the machine is brought safely to rest.

Each drive control system shall be supplied from a suitably rated starter control panel with VCB / Suitable circuit breaker and providing overload, short circuit, single phase, earth fault, under & over-voltage protection, reverse sequence protection and any other protection as may be required for the supplied machine.

All drive systems shall be capable of being remotely started from a control/instrument panel located in the machinery house. A remote stop facility shall be provided in the operator's cab. The control circuits for each drive shall be housed in a steel cabinet provided with internal and external illumination. The cabinets shall be dust and vermin proof. Suitable cooling fans with dust filtering facilities for the cabinets shall be provided. The cabinets shall, preferably, be located on the operator's side of the machine.

Anti-condensation heaters shall be fitted to all major drives and electrical cabinets wherever applicable.

All control circuits shall operate up to 125 V (AC/DC), single-phase 50Hz. with earthed neutral. Lighting circuit maximum at 250V, midpoint grounded with dipolar circuit .The electrical supply for other items shall be either 415V, 3 phase, 50Hz, 220V L-N or 110V phase to phase, 50Hz, single phase with earthed neutral confirming standards and IE rule.

Control circuit transformers shall be protected on their primary side by isolation switches, fuses or circuit breaker. Control circuits shall be protected on one side of the transformer by a fuse with the opposite side connected to earth. All devices which operated at 415/220/110V, 3 phase or single phase, 50 Hz shall be provided with earth leakage and provided with rugged protection as appropriate conforming standards.

All cables used in the machine shall be of the fire resistant type.
Suitable rugged cooling system shall be provided for the electrical control cabinets as per design criteria of the manufacturer.

5.3Motors:

All motors shall be continuously rated for the duty specified and suitable for mining service duty. The AC drive motors should have high torque for fast acceleration / deceleration to ensure fast operating cycles. The insulation should be rated to a minimum Class – F insulation. Motors of suitable ratings with insulated bearings, force ventilated, inbuilt with needed sensors (like bearing temperature, winding temp etc) and with suitable mounted brakes shall be provided.
Rotor shafts shall be mounted on insulated bearings preferably life-time sealed for ease of maintenance.

Terminal boxes shall be fully fault rated and provide for phase segregation of all terminals conforming to Indian or equivalent international standard. An earth connection stud shall be provided.

All AC drive motors shall be provided with temperature monitoring arrangement with RTD's (Resistance Temperature Detectors) incorporated in the windings and in the bearing housing. The monitoring circuit shall be suitably interlocked with the drive control circuit to alarm and trip in the event of an abnormal temperature rise.

Each motor shall have a stainless steel frame type rating plate giving full details including voltage, full-load current, power, frequency, serial number, weight, bearings and their lubricant details.

5.4 Trailing cable:

The machine shall be provided with 300 meters of 6.6 kV, 6 core trailing cable of adequate cross section in relation to the rating of machine and the 50 degree C ambient temperature and supply should be as per Indian Electricity rule clause 123, sub clause 1 & 6. The cable shall be of the flexible type suitable for use with open pit mining machinery. The trailing cable to be provided only once along with the equipment and bidder shall provide complete technical specification and make in their technical offer.

The cable shall have 3 power cores of equal adequate cross section individually screened with metallic ATC (Annealed tinned copper) wire or specially designed formulated semi-conducting compound, 2 earth cores of equal cross section of minimum size of 50% of size of power core and one pilot core. The cable should have minimum insulation level of 12 kV.

The shovel shall be provided with a weatherproof box termination for trailing cable.

5.5 Power Factor Correction and Harmonic Suppression:

The electrical circuit shall have suitable arrangements for power factor correction (if required) to ensure that the average power factor over the full operating cycle is not less than 0.95 lag. The Supplier shall provide a full description of the method of power factor correction proposed.

The electrical circuits shall have adequately designed to have only allowable harmonics as per IEEE519 or with suppression networks (if required) for reducing harmonics and transients to acceptable levels.

5.6 Field Switch:

The shovel should be provided with a skid-mounted field switch. The switch shall be of robust construction suitable for the rugged terrain and the mining conditions for which it will be used. It shall also be dust and vermin proof and protected to withstand torrential monsoon rains. Proper illumination shall be provided within the enclosure.

The switchgear should be of vacuum circuit breaker type with symmetrical rupturing capacity of 150MVA at 6.6 kV. The field switch shall also have earth fault, overload, short circuit, over voltage, under voltage, single phase, earth leakage and reverse phase sequence protection relays. In an emergency it should be possible to trip the field switch from operator's cabin by a push button switch and through inbuilt remote sensor. Provision to trip VCB mechanically and electrically shall also be provided.

Suitable arrangement shall be provided to suppress the damaging over voltage due to switching transients and lighting peaks.

Suitable facilities shall be provided for the termination of supply cables by plug & socket type cable coupler arrangement. Earth connection stud shall be provided on each terminal box and on the main body of the switch casing. It shall be possible to feed through the switch to other similar units. Blank plates and adapters shall be provided to safely seal the feed- through termination against the elements when not in use.

The HV junction Box shall be interlocked with tripping circuit of field switch and HT Isolator panel shall be mounted / placed in such a way that it should be easily accessible for the purpose of maintenance, repair and operation in compliance with Indian Electricity Rules and DGMS circulars.

The Field Switch to be provided only once along with the equipment and bidder shall provide complete technical specification and make in their technical offer.

5.7 Lighting:

Adequate LED flood lighting and illumination (Minimum 10Lux outside the machine, so as to cover the working area of the shovel and Minimum 30 Lux inside the machine) at strategic points both outside and inside of the shovel shall be provided for visual observation and night shift operation. The lighting fixtures shall be supplied at 220/110 V fed from main / auxiliary transformer (star point grounded). Earth leakage protection is to be provided with lighting circuit breaker.
Equipment shall be provided with emergency lighting system to illuminate inside& outside of the machine for a minimum period of continuous 30 minutes in case of power failure for safety of personnel. The detail of the emergency lighting system is to be given in the technical literature of the offer.

5.8 Instrument/ Test/ Alarm Panels:

Instrument/test/alarm panels shall be provided to measure critical parameters of the power and control circuits to assist maintenance and repair operations. As a minimum, indications of the following are to be provided:

- Incoming voltage, current**,** frequency**,** power consumption and power factor.
- Loop voltage and current for hoist, crowd, swing and propel motors
- A computer based fault monitoring/alarm facility or similar arrangement shall be provided comprising monitoring circuits, annunciators, fault code indicators & recording, test push-button and "alarm accept" push button. Equipment should be fitted with suitable software based HMI system for quick fault finding and diagnosis.

Typically, monitoring facilities shall be provided for the following:

i) Hoist, crowd, swing and propel motor's, current/over current and voltage
ii) DC bus over-voltage
iii) Motor over-speed for all motions - Hoist, crowd, swing and propel
iv) AC and DC (if any) circuit earth faults
v) Transformer over-temperature
vi) Failure of any point of the Lubrication system
vii) Bearing over-temperature
viii) Air pressure loss
ix) Frequency fluctuation & tripping facility in the event of fluctuation beyond permissible set limit.
x) Power supply error & tripping facility in the event of fluctuation beyond permissible set limit.
xi) Blower motor fault indication
xii) Boom jacking indicator

All instruments provided with the machine shall comply with Indian Standard 1248 industrial accuracy and shall be vibration resistant type.

Comprehensive testing facility shall be provided on all control circuits in the form of jack sockets, screw connectors etc. for the use of test instrument such as X-Y plotters, oscilloscopes, multi -meters etc. Alternatively a computer based comprehensive testing system with the capability for digital interface for remote access shall be preferred.

5.9 Transformers:

All transformers shall be of reputable manufacture, suitably rated for the duty specified and the operating environment with necessary protection. Auxiliary transformers shall be delta - star connected with star points earthed for each fault protection.

5.10 Auxiliary Equipment:

The power supply to any auxiliary equipment shall be either 415V 3 phase 50HZ or 220V/110V, 50HZ, single phase with earthed neutral as appropriate. Care should be taken with the use of single-phase circuits to ensure that the loads are balanced across the three-phase supply to avoid tripping on starter.

Controls for such equipment shall be housed in steel cabinets or wall mounted panels. The cabinet shall be dust and vermin proof. Suitable cooling fans with dust filtering facilities for the cabinet shall be provided where necessary.

Anti-condensation heaters shall be fitted to all cabinets wherever applicable.

Each auxiliary drive motor shall be supplied from a starter controlled panel having suitably rated circuit breakers for each motor, providing overload, short-circuit and single-phase, earth-fault, under voltage protection and reverse phase sequence protection (if necessary) shall also be provided. Earth leakage protection shall be provided in each system of 415 / 220 / 110V to isolate main feeder in case of current leakage to the ground.

Control circuits of auxiliary equipment shall operate at 220V/110V single phase 50 Hz with earth neutral.

All cables used shall be of fire resistant type.

5.11 Limit Switches:

Limit switches/ resolvers / position sensors interlocked with the relevant control circuit shall be provided for the hoist and crowd motions and for the boom lift over travel (Boom Jacking).

5.12 Interlocks:

Interlocking shall be provided to allow safe access to all high voltage areas after isolation of the incoming supply to the shovel.

***5.13 Safety* Features**

All safety features & devices as per Govt. Of India Gazette notification no. Z 20045/01/2018/S&T (HQ) dated 01.10.2018, DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020 and any subsequent amendments, if any, including following shall be provided in the equipment. Bidder shall submit a Certificate as an undertaking in this regard that all safety features and devices are incorporated in the equipment.

a. All function cut off switch shall be provided in operator's cabin & field switch.
b. Swing Motor Brake.
c. Seat Belt for Operator with reminder shall be provided.

d. Fire/ heat resistant/retardant hydraulic hoses in place of ordinary hoses to minimize the chance of fire. All the sleeves and conduits where cable/wires are passed shall be fire/ heat resistant.
e. Vent valve on top of hydraulic tank should be able to be removed without any tool, wherever applicable
f. A baffle plate between cold zone and hot zone, wherever applicable.
g. Provision for limiting of hydraulic cylinder stopper, wherever applicable.
h. Rear vision camera and warning system for Operator Fatigue shall be provided in compliance with DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.
i. Protective measures & devices
j. Protection for Electrical and Electronic system
k. Two way communication system other than mobile phone in operators cabin.

5.14. Warning devices and safety signs: -

a. The machine shall be equipped with an audible warning device (horn) controlled from the operator station.
b. Warning system for Operator's fatigue.
c. Audio Visual Alarm (AVA) for reversing
d. Safety signs and hazard pictorials shall be displayed at conspicuous places.
e. Retro-Reflective Reflectors shall be provided on all sides of the machine at suitable positions.

6. Ancillary equipment and other requirements

The following shall be provided on each shovel:

a. Air operated/ Electric drive winch motor fitted with drum and rope shall be provided at suitable location inside machinery house for fitting of hoist ropes.
b. Adequate 440/415 V 3-phase, 50 Hz welding power outlets suitably located so that welding can be carried out at any point on the shovel.
c. A 440/415 V 3-phase, 50 Hz, Fully thyristerised / ***inverter type*** welding machine with accessories suitable for welding and gouging purpose.
d. Adequate 220/110 V, single phase, hand-held inspection outlets, portable hand lamps and all necessary supporting equipment,
e. 220/110 V, single phase, portable electric blower with suction attachment and all necessary supporting equipment.
f. Workbench fitted with vice and tool chest.
g. 2 nos. 150T Hydraulic jack of reputed make.
h. 1 set Pneumatic Wrench of 1 inch drive as well as cassettes of suitable drive size to cover limited clearance nuts/bolts fitted in the offered machine along with various applicable sizes of sockets of reputed make.
i. Boom foot cushion tightening wrench - 2 nos. if required.
j. Crowd belt tightening tools (if crowd has belt drive).
k. Center gudgeon nut tightening tools.
l. A suitably programmed laptop (programmer) for loading software in PLCs.
m. Portable Infra-Red Temperature Gauge (Digital) - 01 No
n. Digital multimeter-01 No

o. Digital Megger (100V to 1000V) -01 No
p. Digital Megger 5 KV -01 No
q. AC/DC digital clamp meter 2000 A -01 No.
r. Non-contact type tachometer-01 No
s. Digital portable type vibration meter with all accessories – 01 No
t. Any other jacks and jigs to be supplied with machine to attend all types of maintenance and breakdowns.

7. Productivity & Health monitoring system:

The equipment shall be provided with suitable licensed, on-line, real time, monitoring interface facility, compatible for GPS-based transfer of equipment performance data (commonly known as PMS and HMS) to third party equipment management system.

The system shall have measuring points and self data capturing facility for followings -

i) Working hour, idle hour, based on the duration of a shift for which the equipment is switched on for operation.
ii) Cumulative qty. of material handled (both in terms of Cu. M. & No. of buckets)
iii) Average cycle time for each day
iv) Average swing angle per day
v) Incoming voltage, current, power consumption, frequency and power factor.
vi) All drive circuit loop vital parameters
vii) Transmission / gear box vital parameters
viii) Air / hydraulic system vital parameters
ix) All drive motors / transformer vital parameters
x) Preventive maintenance parameters
xi) Predictive health monitoring parameters.
xii) Additional parameters as per requirement of equipment manufacturer / user

This system shall have suitable memory capacity to store all captured vital parameter data in 6 hours or less interval batch form and all real time exception / error data for at least 30 days period and shall have suitable port to download these data to a laptop / data storage system.

The supplier shall provide the following:

1. There has to be one integrated single online port for capturing all the vital data.
2. The real time interface telemetry port will be provided in the equipment
3. All the data shall be available in the individual form through single port and its communication protocol must be as per global standards.
4. There shall be no additional requirement of any data converter for data capturing like Analog to Digital and vice-versa etc.
5. There shall be integrated on board data management system as explained at point no.3 as above.
6. Permission to third party for interfacing, data collection through online port.
7. Signing of Non-disclosure agreement to protect intellectual property right on either side.

8. To provide full technical support to third party vendor for interpretation and defining parameters for individual alarm to monitor equipment vital data.
9. The HEMM equipment supplier should provide access to data as required by end user without any financial implication to third party.

This interface facility shall be made available till the working life of equipment.
However, the supplier shall provide this interface facility during the contract period as a part of contract cost.

To ensure the satisfactory operation of above system, a tripartite agreement shall be signed by the user, supplier and the service provider of OITDS / System Integrator.

8. Performance Guarantee

In accordance with the provisions of clause C 6.2.6 of the technical specifications the expected working hours per annum are 5000 (five thousand) hours. The expected working hours per annum as indicated are only approximate hours and may vary ± 500 hours. The expected average working hours per annum as indicated are only approximate hours and may vary ± 500 hours. Total duration of contract will be 300 months irrespective of working hour. In case, actual working hour exceeds 1,37,500 (5500 X 25) hrs during the tenure of 25 years contract period, then consumable items (as declared by the bidder in the offer) will be arranged by the purchaser.

In accordance with the provisions of clauses C 7.2.2 and C 7.3.2 of the technical specifications the supplier shall guarantee that the availability of each equipment shall be not less than 85% (eighty-five percent) annually for a period of 1st to 6th year of operation, 84% (eighty-four percent) annually for a period of 7th to 12th year of operation, 83% (eighty-three percent) annually for a period of 13th to 18th year of operation and 82% (eighty-two percent) annually for a period of 19th to 25th year of operation from the accepted date of commissioning.

During contract period of 25 Years (300 Months) a period of 07 (Seven) days per year shall be allowed to equipment supplier in consultation with project Excavation head, in 5th to 25th year for each machine for planned maintenance of equipment. This down time [maximum period of 07 (Seven) days] arising due to such maintenance of the equipment shall be treated as out of schedule for annual availability calculation in the relevant year. This period of 07 (Seven) days shall be provided once only in each applicable year and not in a staggered or partial manner. In case of any spillover of maintenance job(s) beyond such 07 (Seven) days period shall be treated as breakdown hours.

9. Expected life of major assemblies

Manufacturer shall give expected life of major assemblies also in the Format given in Table below, duly signed.

Table

EQUIPMENT	MAJOR ASSEMBLIES	EXPECTED LIFE* (in Hours)
	AC Main Drive Motor	

EQUIPMENT	MAJOR ASSEMBLIES	EXPECTED LIFE* (in Hours)
Elect. Rope Shovels	Undercarriage & steering system	
	Transmissions (Hoist, Swing, Crowd & Propel)	
	Transformer	
	Boom	
	Dipper handle	
	Dipper	
	Brakes	
	Track Chain	
	Track Rollers, Sprocket, Idler	
	Swing Roller & Swing Gear	
	Field Switch	

Note - * Expected life means life before first overhaul

10. **Information to be provided by the supplier:**
The supplier shall furnish the following information.

10.1 General:

a. Number of offered/similar model supplied during the last 10 years. The information shall be given in the following format and in the order of most recent first.

Company Name	Mine Name	Mine Location	Mine type	Sl No. of Machines	Model & Capacity	Commissioned date (DD/MM/YYYY)

The information in the above format should be self-certified.

b. Details of special tools to be provided with the equipment.
c. Details of erection programme for the bid.

10.2 Technical Details

a. Calculations and drawings verifying the dipper capacity
b. i) Curve of KW- Time for the following operating cycle
Load the dipper to rated capacity over the maximum working range, swing through an angle 90 degree, dump and return to dig.
ii) Calculations for determining the time and hourly power consumption for the following operating cycle
Load the dipper to rated capacity over the maximum working range, swing through an angle 90 degree, dump and return to dig.

a. Calculation and drawings, etc. verifying the maximum value of the ratio of the over turning moment to the resisting moment under the following operating conditions:
   i) Dipper at maximum force digging position with crawler tracks perpendicular to the face of the cut
   ii) Dipper at maximum force digging position with crawler tracks parallel to the face of the cut
d. Detailed mechanical and electrical descriptions and specifications of the shovel
e. Layout drawings and detail description of all machinery including method of power transmission, mounting details and method of alignment
f. Details of the type and method of drive systems offered
g. Performance curves of hoist, crowd, swing and propel motions
h. Schematic drawings of the automatic lubrication system, and the details of the supplier, number, type and function
i. Details of productivity and Health management System of the equipment
j. Details of major bought-out assemblies and sub-assemblies including manufacturer and complete addresses, type etc.
k. Operation and maintenance manuals in accordance with ISO 6750
l. Description of protection instruments and monitoring features of the supply circuits and drive system
m. Complete technical specification of all wire ropes including length, diameter, construction and lubrication.
n. Comprehensive commercial literature specification complying relevant ISO standard.

10.3 Dimensions, Weights and performance details

10. 3.1 Working Ranges

a) Maximum cutting height (m)
b) Maximum cutting radius (m)
c) Maximum dumping height (m)
d) Dumping radius at maximum height (m)
e) Dumping height at maximum radius (m)
f) Dumping radius maximum (m)
g) Cutting depth below ground level (m)
h) Radius of clean up (m)

10.3.2 Basic Dimensions

a. Clearance radius, boom point (m)
b. Clearance height, boom point (m)
c. Clearance radius, rear (m)
d. Clearance under upper frame (m)
e. Clearance under lower frame (m)
f. Clearance height, gantry (m)
g. Clearance height, cab (m)
h. Clearance width, cab without walkways (m)
i. Operator's eye level height (m)

j. Ground to Boom foot pin (m)
k. Center of rotation to boom foot (m)

10.3.3 Machine Weights

a. Shipping weights of all separate components (kg)
b. Working weight (kg)
c. Ballast (kg)

10.3.4 Performance

a. Bail pull at peak power (kN)
b. Bail speed at peak power (m/sec)
c. Crowd force at peak power (kN)
d. Crowd speed at peak power (m/sec)
e. Maximum digging force (kN)
f. Reach at maximum digging force (m)
g. Swing torque at peak power (kNm)
h. Swing speed at peak power (rad/sec)
i. Maximum swing torque (kNm)
j. Tractive effort at peak power (kN)
k. Propel speed at peak power (m/sec)
l. Total cycle time (sec) 90^0 and 120^0swing

10.3.5 Power ratings

Power Voltages and frequency [indicating the fluctuations these can be subjected to]
Power factor at rated load

- Continuous motor kW ratings

a) Hoist
b) Crowd
c) Swing
d) Propel

- Peak Input power in kW

1. Hoist
2. Crowd
3. Swing
4. Propel

10.3.6 Dipper

a. Capacity (cu.m) and weight (kg)
b. Capacity range (cu.m)

10.3.7 Front End

a. Boom length, center to center (m) and weight (kg)
b. Dipper handle, effective length (m) and weight (kg)
c. Point sheave pitch diameter (m)

10.3.8 Crawler Mounting

a. Crawler length, standard (m)
b. Crawler width, standard(m)
c. Crawler belt width, standard (m)
d. Bearing area (m^2)
e. Bearing pressure (kPa)
f. load rollers, number per crawler
g. Load roller, diameter (m)
h. Driving sprocket, diameter (m)
i. front idler roller, diameter (m)
j. Center to center of sprockets and idler (m)
k. Crawler shoes width and total number
l. Gradeability (%)

10.3.9 Circle gear and roller path

a) Swing gear pitch diameter (m)
b) Width of teeth (m)
c) Roller path diameter (m)
d) Rollers, number and diameter (m)

10.3.10 Hoist

Hoist drum diameter (m)

10.3.11 General

a) Quantity, Size and specification of ballast required
b) Specifications of all wire ropes including length, diameter and construction
c) Details, number and location of fire extinguishers
d) Details of the basic functions of the Graphic User Interface (GUI) installed in the offered model.

Equipment Acceptance

The Equipment ordered will be finally accepted subject to the Supplier demonstrating to the Purchaser or its authorised representative (may be third party) that the equipment, or assembly or sub-assembly (selected at random by the Purchaser) when tested, meets the Performance Data provided by the Supplier in accordance with the requirements of clause 10. In case if testing facility for a particular parameter is not available at site, the Equipment ordered will finally be accepted subject to submission of Manufacturer's certified test copy for that parameter of performance data provided by the supplier in accordance with the requirements of clause 10. A detrimental deviation of up to 2½% will be accepted

1	Cycle Time at 90 deg swing	To be tested at project site after commissioning, under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
2	Hourly Power Consumption	To be tested at project site after on 30 (thirty) operating days' average immediately after commissioning under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
3	Hoist Performance, Crowd Performance, Swing Performance, Swing Loading and Propel Performance	To be tested by Equipment manufacturer and test data/report should be submitted.

PART D: - EQUIPMENT SPECIFICATION

EQUIPMENT SPECIFICATION OF 20CuM ELECTRIC ROPE SHOVEL

1. Scope of specification:

This specification is intended to cover the technical requirements for the design, manufacture, testing, delivery, on site erection and commissioning of a self-propelled, crawler mounted, Electric Rope Shovel of 20CuM dipper capacity having bottom discharge bucket, conforming to relevant SAE/equivalent standard.

2. References:

The following International Standards as per latest amendment are referred to in, and form part of, the Specification. The superseded or equivalent standards, if any, to any of the following ISO standards if offered are to be supported by documentary evidence in form of copies of the equivalent standards certifying that offered standards are identical to the corresponding ISO standards of NIT.

ISO 2867	Earth-moving machinery - Access system
ISO 3457	Earth-moving machinery - Guard and Shields- Definitions and specification
ISO 6682	Earth-moving machinery - Zones of comfort and reach for controls.
ISO 6405-1	Earth-moving machinery - Symbols for operator controls and other displays - Part 1 : Common Symbol
ISO 6405-2	Earth-moving machinery - Symbols for operator controls and other displays - Part 2 : Specific symbols for machines, equipment & accessories
ISO 7000 / IEC60417	Graphical symbols for use on equipment
ISO 6750-1	Earth-moving machinery - Operator's Manual - Part1 : Contents & Formats
ISO 6750-2	Earth-moving machinery - Operation and Maintenance - Operator's Manual - Part2 : List of references
ISO 10968	Earth-moving machinery - Operator's control
ISO 20474-1	Earth-moving machinery - safety - Part1 : General requirement
ISO 20474-12	Earth-moving machinery - safety - Part12 : Requirement for cable excavators

Other ISO standards mentioned in the specification of individual system of the equipment

3. Design Criteria:

The shovel shall be capable of continuous digging for protracted periods on a system of 03 (three) shifts each of 8hrs duration per day throughout the year in hard, highly abrasive sandstone/ rock having average density of 1800 kg/ cum after blasting.

The ER shovel **20CuM** shall be suitable for 2:1 heaped loading of rear dumpers with capacities ranging from 190T to 220T. The shovel shall have the following working ranges:

Sl.No.	Description	Range
a	Maximum cutting height	not less than 13.25 m
b	Maximum cutting radius	not less than 18.50 m
c	Maximum dumping height(Door open)	not less than 8.00 m
d	Dumping radius at maximum height	not less than 16.00 m
e	Dumping height at maximum radius	not less than 5.50 m

4. Mechanical Specification:

4.1 Dipper:

The rope shovel shall be supplied with a hard faced, heavy-duty bottom discharge rock dipper of 20CuM capacity as defined by the Society of Automotive Engineers (SAE) rating/equivalent standard.

The specific weight of steel used in construction of bucket shall be not less than 7800 kg/ cum.

All consumable items of the bucket, including tooth points, shanks/ tooth adapters etc. are to be supplied along with the dipper. The tooth points, shanks, etc. should be wear resistant / hard faced and should have proper, durable, easily removable and shock absorbing type attachment with the dipper. The latch bar and lever should be of heavy-duty type.

4.2 Boom & Dipper Handle:

The shovel boom and dipper handle should be rugged, durable construction of high strength impact resistant low alloy steel and free from any stress concentration. The design must take care of all forces i.e. bending, torsion, compression etc. encountered during operation of the shovel. Shock absorbers shall be incorporated in the boom to absorb the impact of the dipper or suitable arrangement shall be provided to absorb the shock and prevent dipper hitting the boom. Stoppers of suitable strength to be provided at the other ends of dipper handle.

4.3 Boom Point Sheaves:

The boom point sheaves shall be large of rugged construction, and mounted on low maintenance, anti-friction bearings / bushings, having auto lubrication facility.

Walkways with handholds shall be provided to allow easy access to the boom point sheaves.

4.4 Crawler Mounting:

Crawler frames shall be heavy welded box section design with bolted fit to car body. The crawler side frames and load rollers shall be of sufficient strength to withstand the high loads, which may occur due to uneven ground conditions. They shall be of welded construction and preferably stress relieved.

The drive sprocket should be a single piece / segmented type and a reliable track tensioning arrangement should be provided. The front idler, load rollers, rear idler shall be mounted on low maintenance, anti-friction bearings/bushings. Crawler shoes shall be heavy duty and designed for ease of replacement whenever necessary.

4.5 Lower Frame:

The lower frame shall be a single unit of heavy welded high strength low alloy steel structure construction, designed to withstand repeated high loading under difficult digging conditions.

Suitable means of access with removable covers shall be provided for ease of maintenance.

The roller circle shall have lubricated rollers and be fitted with sealed bearings/bushings or are lubricated with open gear lubricant.

The ring gear shall be of high alloy steel for optimum wear resistance.

4.6 Propel:

An independent propel system for each track shall be provided, allowing for counter rotation. Propel brakes shall be provided to stop the machine during any travelling condition and shall be interlocked with the travel controller to prevent travel until the brakes are released.

4.7 Revolving frame:

The revolving frame shall be strong rigid unit of heavy section good quality high strength alloy steel. The design and manufacture of the frame must ensure proper and uniform load distribution. Suitable machined pads should be provided along the frame of mounting and aligning the various drive units and other accessories.
Mounting lugs for the boom and gantry should preferably be provided for the required counter-balance weight.

Ballast boxes of sufficient size and proper design shall be provided for required counter balance. The ballast shall be of cast iron ball / grinding media having diameter range as per design requirement.

The purchaser (concerned subsidiary) shall provide the ballast in time to avoid the delay in commissioning.

4.8 Machinery House:

The machinery house shall be made of steel sheet supported by a steel structure and shall cover the entire machinery deck. It shall be fitted with a filtered pressurized air system for ventilation, cooling and to prevent entry of dust into the machinery house with auto reversing fan to vent out dust accumulated in the filter avoiding manual intervention. The machinery house shall be designed to give ready and safe access to personnel and equipment for inspection and maintenance. In particular, sufficient space shall be provided around all main drives and sub-

assemblies for ease of inspection, maintenance and removal. Roof panels shall be strategically located to direct crane picks of major deck mounted components as required.

Rollers or suitable arrangement shall be provided as rope guides at the entrance to the machinery house for all ropes to prevent any abrasion and damage.

Inspection covers shall be provided on all gear-cases.

Non-slip type walkways and catwalks with handrails shall be provided in and around the machinery house, the operator's cab and service platforms shall comply with ISO 2867.

4.9 Main Machinery:

All gears and shafts shall be manufactured from high quality steel and mounted in anti-friction bearings.
Gears and pinion should be suitably heat-treated.

Inspection covers shall be provided on all drive gear-cases.

All functions, such as Crowd, Hoist, Swing and Propel shall be provided with 'ON' type brake so that the brakes are applied automatically, in case of electrical power failure. All main drive motors shall be equipped with disc type brake.

4.10 Air Compressor:

Air compressor of sufficient capacity with all required safety features shall be provided.

Test certificate of the air tank as per DGMS requirement to be submitted before commissioning.

4.11 Lubrication:

A centralized PLC based electrically operated, double / single line (as per manufacturer system design) automatic lubrication system shall be provided to service all lubrication points on the machine, including those points where use of high viscosity lubricants is required.

The lubrication system shall be fully monitored to ensure adequate lubricant flow is maintained to all points of major parts. The monitoring system shall, wherever necessary, be interlocked with the relevant control circuits to prevent damage due to lack of lubrication at any point. Alarms and indications for failure of lubrication system shall be provided and shall be repeated on the instrument/ test panel.

Lubricant containers of adequate size shall be located in a separate room/enclosure inside the machinery house and be large enough to cater lubrication needs for continuous operation between refills. Sufficient numbers of suitable capacity lubricating pumps shall be provided. The containers shall be fitted with suitable arrangement for cleaning and refilling or replacement with fresh new barrels.

All lubrication lines and injectors shall be protected from damage. Location of all injectors shall be such that these can be conveniently inspected and repaired. The lubrication lines to the boom point should be properly guided. Flexible lines shall only be used where there is relative movement between parts and for final connection to movable components. Preferably steel piping shall be used for long runs and shall terminate in steel junction blocks or rigidly mounted bulk head connectors to prevent disturbance to steel piping when flexible hoses are replaced.

Fire/heat resistant/ retardant hydraulic hoses shall be provided in lubrication system. The vent valve on the top of hydraulic tank, if provided, shall be able to be removed without any tool. Lubricants recommended shall be of reputed make with Indian equivalent, if available.

Suitable motorized and manual Transfer Pumps as per requirement shall be provided for transferring each type/grade of lubricants.

4.12 Operator's Cab:

A fully insulated, high-visibility, rigidly mounted, sound-suppressed, vibration-suppressed, air conditioned, operator's cab with tinted safety glass should be so positioned to facilitate a clear and unrestricted view of the travel & work areas of the machine necessary for its intended use. The performance criteria shall be in accordance with ISO 5006. The sound level inside the cab shall be below 80dBA while the equipment is operating, and with the door closed. All operating controls, all monitoring, working signals and emergency power isolation switch to trip the field switch should be conveniently located in consoles within easy reach of the operator and shall comply with ISO: 6405-1, ISO: 6405-2, ISO: 6682 & ISO: 10968. The operator's cab shall be provided with an emergency exit gate in addition to primary access path to the cabin.

The operator's seat shall be ergonomically designed suspension type, which can be adjusted for operator's height and weight. The seat shall provide vertical and fore / aft adjustment to allow custom fitting of the joysticks to individual operators for ease of operation. Seatbelt for operator with reminder shall be provided. The console shall have features an expandable media mounting post to which the Graphic User Interface (GUI) is mounted. The GUI shall have menus and information screens that allow the operator to display necessary basic information and perform various operation functions. Side / rear vision cameras shall be provided in the machine with remote display in operator's cab. The camera system shall also cover all the blind spots.

The air conditioner shall be heavy duty off-the-road equipment application type. The climate control ducting in the cab shall be located above and/ or below the operator. There should be controls to allow regulation of air flow and auto - defrosting arrangement. A cooling fan and a blower type heater shall also be provided.

Horn / Alarm shall be provided on both outer sides of revolving frame, which shall be operated from operator's cab.

There should be a two-way communication system between operator's cab and the machinery house.

4.13 Guards & Shields:

Adequate guards and shields, which comply with ISO 3457, shall be provided throughout the shovel.

4.14 Boarding Ladders:

Boarding ladders shall be provided on the both sides of the machinery house.

The ladders shall be equipped with suitable interlock so that when the ladder is put/pull down, the interlock switch shall control the propel and swing mechanism to prevent any rotational or travel movement of the equipment for safety of site people.

4.15 Fire Extinguishers:

An adequate number of fire extinguishers shall be provided at strategic points on the shovel, suitably mounted in heavy-duty brackets for ease of removal.

The extinguishers shall be both dry chemical powder (DCP type) and CO_2 type with a minimum capacity of 5 kg and shall comply with Indian Standard IS: 15683 with latest amendment.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for fire extinguisher including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013. Periodical refilling is to be done by the supplier.

4.16 Fire Detection and suppression system:

A suitable automatic fire detection and suppression system of reputed manufacturer (indigenous or imported), shall be provided on the equipment complying DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.

- Automatic fire detection and suppression system suitable for fire class A, B & C inside machinery house & below Deck of shovel.
- Bidder requires submitting aschematic drawing indicating Plan of the system with relative position of items to be protected from fire.
- Fire detection and suppression of fire may be either total gas flooding or dry chemical powder base spray through nozzle strategically through an actuation cartridge, located to the targets, or combination of the two.
- Fire suppression agent used in neighborhood of electrical appliances shall be clean and shall not damage electrical / electronic component.
- Fire suppression system shall be non-hazardous & safe for human and environment friendly. It should have quick cleanup and environmental sustainability.

- The sensor shall send the signal to the control unit integrated with a LED and/or alarm indicator to show the status of the detector.
- The system shall operate only in active fire zone and suitably designed to extinguish the fire as per class of fire (A, B & C) of that location.
- The system shall be actuated automatically by detection of fire and control unit to be installed within the Operator's cabin for automatic system operation.
- The system shall also have provision of actuating manually.
- The system shall provide facility for self-checking /testing/inspection without operating.
- The data regarding health & event shall be logged in the system with date & time, which can be downloaded to PC/ Laptop in latter stage with memory capacity to store data of at least 15days.
- The system should be capable for efficient operation in the extreme mining conditions with dust, dirt, water & vibrations.

The high pressure storage vessels and hoses, if used with fire- fighting and fire suppression systems, shall conform to the requirements stipulated in the relevant Indian standards.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for AFDSS including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013.Periodical refilling is to be done by the supplier.

5. Electrical Specification

5.1 Power Supply:

The electrical power supply to the machine will be 6.6 kV (± 10 %), 50 Hz (± 3 %), 3 phase. This will be provided via a flexible trailing cable from the mine electrical distribution network.

All high-tension electrical equipment in the shovel shall be capable of withstanding 12 kV switching transients to protect against a rise in potential across any one phase of the supply. This protection shall be provided in the shovel by suitable means preferably either by providing Lightening arrestor of requisite class or with the help of surge suppressor or combination.

In addition suitable arrangement shall be made in the field switch to trip at specific over/under voltage condition. Surge suppressors are also to be provided in the field switch as additional protection.

The supply shall be connected to machine via minimum four collector rings of adequate capacity.

A high voltage distribution switchboard shall be provided to supply the various machine drive, control and auxiliary sub-circuits. Each switch forming part of switchboard and /or controlled HV Motor and Transformer shall be fed from an on-load isolator, an electrically closed and tripped, vacuum circuit breaker / contactor and an appropriate control push buttons as per

provision of Indian Electricity rule 1956 & DGMS requirement. Auxiliary Transformer to be fed from a fused HV grounding isolator. Indicators such as Main on, blown fuse indicator, PF meter, voltmeter, ammeter, elapsed time meter, start & stop button, emergency trip and alarms shall be provided.

5.2 Drive system:

AC electrical drive system shall be provided for motion control of the shovel. The AC drive system must be of latest established design, so that all the functions of the equipment i.e. Hoist, Crowd, Swing and travel / propel operation have optimum output with high mechanical efficiency, low maintenance cost and improved maintainability and component life. The drive shall be IGBT based VVVF active front end type drive or of equivalent / higher technology.

All motions of the machine shall be controlled by a variable torque/speed drive control system. The Supplier shall specify the proposed method of drive control, which is expected to utilize modern electronic techniques. The design of the drive system should ensure that in the event of any failure the machine is brought safely to rest.

Each drive control system shall be supplied from a suitably rated starter control panel with VCB / Suitable circuit breaker and providing overload, short circuit, single phase, earth fault, under & over-voltage protection, reverse sequence protection and any other protection as may be required for the supplied machine.

All drive systems shall be capable of being remotely started from a control/instrument panel located in the machinery house. A remote stop facility shall be provided in the operator's cab. The control circuits for each drive shall be housed in a steel cabinet provided with internal and external illumination. The cabinets shall be dust and vermin proof. Suitable cooling fans with dust filtering facilities for the cabinets shall be provided. The cabinets shall, preferably, be located on the operator's side of the machine.

Anti-condensation heaters shall be fitted to all major drives and electrical cabinets wherever applicable.

All control circuits shall operate up to 125 V (AC/DC), single-phase 50Hz. with earthed neutral. Lighting circuit maximum at 250V, midpoint grounded with dipolar circuit .The electrical supply for other items shall be either 415V, 3 phase, 50Hz, 220V L-N or 110V phase to phase, 50Hz, single phase with earthed neutral confirming standards and IE rule.

Control circuit transformers shall be protected on their primary side by isolation switches, fuses or circuit breaker. Control circuits shall be protected on one side of the transformer by a fuse with the opposite side connected to earth. All devices which operated at 415/220/110V, 3 phase or single phase, 50 Hz shall be provided with earth leakage and provided with rugged protection as appropriate conforming standards.

All cables used in the machine shall be of the fire resistant type.

Suitable rugged cooling system shall be provided for the electrical control cabinets as per design criteria of the manufacturer.

5.3Motors:

All motors shall be continuously rated for the duty specified and suitable for mining service duty. The AC drive motors should have high torque for fast acceleration / deceleration to ensure fast operating cycles. The insulation should be rated to a minimum Class – F insulation. Motors of suitable ratings with insulated bearings, force ventilated, inbuilt with needed sensors (like bearing temperature, winding temp etc) and with suitable mounted brakes shall be provided. Rotor shafts shall be mounted on insulated bearings preferably life-time sealed for ease of maintenance.

Terminal boxes shall be fully fault rated and provide for phase segregation of all terminals conforming to Indian or equivalent international standard. An earth connection stud shall be provided.

All AC drive motors shall be provided with temperature monitoring arrangement with RTD's (Resistance Temperature Detectors) incorporated in the windings and in the bearing housing. The monitoring circuit shall be suitably interlocked with the drive control circuit to alarm and trip in the event of an abnormal temperature rise.

Each motor shall have a stainless steel frame type rating plate giving full details including voltage, full-load current, power, frequency, serial number, weight, bearings and their lubricant details.

5.4 Trailing cable:

The machine shall be provided with 300 meters of 6.6 kV, 6 core trailing cable of adequate cross section in relation to the rating of machine and the 50 degree C ambient temperature and supply should be as per Indian Electricity rule clause 123, sub clause 1 & 6. The cable shall be of the flexible type suitable for use with open pit mining machinery. The trailing cable to be provided only once along with the equipment and bidder shall provide complete technical specification and make in their technical offer.

The cable shall have 3 power cores of equal adequate cross section individually screened with metallic ATC (Annealed tinned copper) wire or specially designed formulated semi-conducting compound, 2 earth cores of equal cross section of minimum size of 50% of size of power core and one pilot core. The cable should have minimum insulation level of 12 kV.

The shovel shall be provided with a weatherproof box termination for trailing cable.

5.5 Power Factor Correction and Harmonic Suppression:

The electrical circuit shall have suitable arrangements for power factor correction (if required) to ensure that the average power factor over the full operating cycle is not less than 0.95 lag. The Supplier shall provide a full description of the method of power factor correction proposed.

The electrical circuits shall have adequately designed to have only allowable harmonics as per IEEE519 or with suppression networks (if required) for reducing harmonics and transients to acceptable levels.

5.6 Field Switch:

The shovel should be provided with a skid-mounted field switch. The switch shall be of robust construction suitable for the rugged terrain and the mining conditions for which it will be used. It shall also be dust and vermin proof and protected to withstand torrential monsoon rains. Proper illumination shall be provided within the enclosure.

The switchgear should be of vacuum circuit breaker type with symmetrical rupturing capacity of 150MVA at 6.6 kV. The field switch shall also have earth fault, overload, short circuit, over voltage, under voltage, single phase, earth leakage and reverse phase sequence protection relays. In an emergency it should be possible to trip the field switch from operator's cabin by a push button switch and through inbuilt remote sensor. Provision to trip VCB mechanically and electrically shall also be provided.

Suitable arrangement shall be provided to suppress the damaging over voltage due to switching transients and lighting peaks.

Suitable facilities shall be provided for the termination of supply cables by plug & socket type cable coupler arrangement. Earth connection stud shall be provided on each terminal box and on the main body of the switch casing. It shall be possible to feed through the switch to other similar units. Blank plates and adapters shall be provided to safely seal the feed- through termination against the elements when not in use.

The HV junction Box shall be interlocked with tripping circuit of field switch and HT Isolator panel shall be mounted / placed in such a way that it should be easily accessible for the purpose of maintenance, repair and operation in compliance with Indian Electricity Rules and DGMS circulars.

The Field Switch to be provided only once along with the equipment and bidder shall provide complete technical specification and make in their technical offer.

5.7 Lighting:

Adequate LED flood lighting and illumination (Minimum 10Lux outside the machine, so as to cover the working area of the shovel and Minimum 30 Lux inside the machine) at strategic points both outside and inside of the shovel shall be provided for visual observation and night shift operation. The lighting fixtures shall be supplied at 220/110 V fed from main / auxiliary transformer (star point grounded). Earth leakage protection is to be provided with lighting circuit breaker.

Equipment shall be provided with emergency lighting system to illuminate inside& outside of the machine for a minimum period of continuous 30 minutes in case of power failure for safety of personnel. The detail of the emergency lighting system isto be given in the technical literature of the offer.

5.8 Instrument/ Test/ Alarm Panels:

Instrument/test/alarm panels shall be provided to measure critical parameters of the power and control circuits to assist maintenance and repair operations. As a minimum, indications of the following are to be provided:

- Incoming voltage, current**,** frequency**,** power consumption and power factor.
- Loop voltage and current for hoist, crowd, swing and propel motors
- A computer based fault monitoring/alarm facility or similar arrangement shall be provided comprising monitoring circuits, annunciators, fault code indicators & recording, test push-button and "alarm accept" push button. Equipment should be fitted with suitable software based HMI system for quick fault finding and diagnosis.

Typically, monitoring facilities shall be provided for the following:

i) Hoist, crowd, swing and propel motor's, current/over current and voltage
ii) DC bus over-voltage
iii) Motor over-speed for all motions - Hoist, crowd, swing and propel
iv) AC and DC (if any) circuit earth faults
v) Transformer over-temperature
vi) Failure of any point of the Lubrication system
vii) Bearing over-temperature
viii) Air pressure loss
ix) Frequency fluctuation & tripping facility in the event of fluctuation beyond permissible set limit.
x) Power supply error & tripping facility in the event of fluctuation beyond permissible set limit.
xi) Blower motor fault indication
xii) Boom jacking indicator

All instruments provided with the machine shall comply with Indian Standard 1248 industrial accuracy and shall be vibration resistant type.

Comprehensive testing facility shall be provided on all control circuits in the form of jack sockets, screw connectors etc. for the use of test instrument such as X-Y plotters, oscilloscopes, multi-meters etc. Alternatively a computer based comprehensive testing system with the capability for digital interface for remote access shall be preferred.

5.9 Transformers:

All transformers shall be of reputable manufacture, suitably rated for the duty specified and the operating environment with necessary protection. Auxiliary transformers shall be delta - star connected with star points earthed for each fault protection.

5.10 Auxiliary Equipment:

The power supply to any auxiliary equipment shall be either 415V 3 phase 50HZ or 220V/110V, 50HZ, single phase with earthed neutral as appropriate. Care should be taken with the use of single-phase circuits to ensure that the loads are balanced across the three-phase supply to avoid tripping on starter

Controls for such equipment shall be housed in steel cabinets or wall mounted panels. The cabinet shall be dust and vermin proof. Suitable cooling fans with dust filtering facilities for the cabinet shall be provided where necessary.

Anti-condensation heaters shall be fitted to all cabinets wherever applicable.

Each auxiliary drive motor shall be supplied from a starter controlled panel having suitably rated circuit breakers for each motor, providing overload, short-circuit and single-phase, earth-fault, under voltage protection and reverse phase sequence protection (if necessary) shall also be provided. Earth leakage protection shall be provided in each system of 415 / 220 / 110V to isolate main feeder in case of current leakage to the ground.

Control circuits of auxiliary equipment shall operate at 220V/110V single phase 50 Hz with earth neutral.

All cables used shall be of fire resistant type.

*5.*11 Limit Switches:

Limit switches/ resolvers / position sensors interlocked with the relevant control circuit shall be provided for the hoist and crowd motions and for the boom lift over travel (Boom Jacking).

*5.*12 Interlocks:

Interlocking shall be provided to allow safe access to all high voltage areas after isolation of the incoming supply to the shovel.

5.13 Safety Features

All safety features & devices as per Govt. Of India Gazette notification no. Z 20045/01/2018/S&T (HQ) dated 01.10.2018, DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020 and any subsequent amendments, if any,including following shall be provided in the equipment. Bidder shall submit a Certificate as an undertaking in this regard that all safety features and devices are incorporated in the equipment.

a. All function cut off switch shall be provided in operator's cabin & field switch.
b. Swing Motor Brake.
c. Seat Belt for Operator with reminder shall be provided.
d. Fire/ heat resistant/retardant hydraulic hoses in place of ordinary hoses to minimize the chance of fire. All the sleeves and conduits where cable/wires are passed shall be fire/ heat resistant.
e. Vent valve on top of hydraulic tank should be able to be removed without any tool, wherever applicable
f. A baffle plate between cold zone and hot zone, wherever applicable.
g. Provision for limiting of hydraulic cylinder stopper, wherever applicable.
h. Rear vision camera and warning system for Operator Fatigue shall be provided in compliance with DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.
i. Protective measures & devices

j. Protection for Electrical and Electronic system
k. Two way communication system other than mobile phone in operators cabin.

5.14. Warning devices and safety signs: -

a. The machine shall be equipped with an audible warning device (horn) controlled from the operator station.
b. Warning system for Operator's fatigue.
c. Audio Visual Alarm (AVA) for reversing
d. Safety signs and hazard pictorials shall be displayed at conspicuous places.
e. Retro-Reflective Reflectors shall be provided on all sides of the machine at suitable positions.

6. Ancillary equipment and other requirements

The following shall be provided on each shovel:

a. Air operated/ Electric drive winch motor fitted with drum and rope shall be provided at suitable location inside machinery house for fitting of hoist ropes.
b. Adequate 440/415 V 3-phase, 50 Hz welding power outlets suitably located so that welding can be carried out at any point on the shovel.
c. A 440/415 V 3-phase, 50 Hz, Fully thyristerised / ***inverter type*** welding machine with accessories suitable for welding and gouging purpose.
d. Adequate 220/110 V, single phase, hand-held inspection outlets, portable hand lamps and all necessary supporting equipment,
e. 220/110 V, single phase, portable electric blower with suction attachment and all necessary supporting equipment.
f. Workbench fitted with vice and tool chest.
g. 2 nos. 100T Hydraulic jack of reputed make.
h. 1 set Pneumatic Wrench of 1 inch drive as well as cassettes of suitable drive size to cover limited clearance nuts/bolts fitted in the offered machine along with various applicable sizes of sockets of reputed make.
i. Boom foot cushion tightening wrench - 2 nos. if required.
j. Crowd belt tightening tools (if crowd has belt drive).
k. Center gudgeon nut tightening tools.
l. A suitably programmed laptop (programmer) for loading software in PLCs.
m. Portable Infra-Red Temperature Gauge (Digital) - 01 No
n. Digital multimeter-01 No
o. Digital Megger (100V to 1000V) -01 No
p. Digital Megger 5 KV -01 No
q. AC/DC digital clamp meter 2000 A -01 No.
r. Non-contact type tachometer-01 No
s. Digital portable type vibration meter with all accessories – 01 No
t. Any other jacks and jigs to be supplied with machine to attend all types of maintenance and breakdowns.

7. Productivity & Health monitoring system:

The equipment shall be provided with suitable licensed, on-line, real time, monitoring interface facility, compatible for GPS-based transfer of equipment performance data (commonly known as PMS and HMS) to third party equipment management system.

The system shall have measuring points and self data capturing facility for followings -

i) Working hour, idle hour, based on the duration of a shift for which the equipment is switched on for operation.
ii) Cumulative qty. of material handled (both in terms of Cu. M. & No. of buckets)
iii) Average cycle time for each day
iv) Average swing angle per day
v) Incoming voltage, current, power consumption, frequency and power factor.
vi) All drive circuit loop vital parameters
vii) Transmission / gear box vital parameters
viii) Air / hydraulic system vital parameters
ix) All drive motors / transformer vital parameters
x) Preventive maintenance parameters
xi) Predictive health monitoring parameters.
xii) Additional parameters as per requirement of equipment manufacturer / user

This system shall have suitable memory capacity to store all captured vital parameter data in 6 hours or less interval batch form and all real time exception / error data for at least 30 days period and shall have suitable port to download these data to a laptop / data storage system.

The supplier shall provide the following:

1. There has to be one integrated single online port for capturing all the vital data.
2. The real time interface telemetry port will be provided in the equipment.
3. All the data shall be available in the individual form through single port and its communication protocol must be as per global standards.
4. There shall be no additional requirement of any data converter for data capturing like Analog to Digital and vice-versa etc.
5. There shall be integrated on board data management system as explained at point no.3 as above.
6. Permission to third party for interfacing, data collection through online port.
7. Signing of Non-disclosure agreement to protect intellectual property right on either side.
8. To provide full technical support to third party vendor for interpretation and defining parameters for individual alarm to monitor equipment vital data.
9. The HEMM equipment supplier should provide access to data as required by end user without any financial implication to third party.

This interface facility shall be made available till the working life of equipment. However, the supplier shall provide this interface facility during the contract period as a part of contract cost.

To ensure the satisfactory operation of above system, a tripartite agreement shall be signed by the user, supplier and the service provider of OITDS / System Integrator.

8. Performance Guarantee

In accordance with the provisions of clause C 6.2.6 of the technical specifications the expected working hours per annum are 5000 (five thousand) hours. The expected working hours per annum as indicated are only approximate hours and may vary ± 500 hours. The expected average working hours per annum as indicated are only approximate hours and may vary ± 500 hours. Total duration of contract will be 264 months irrespective of working hour. In case, actual working hour exceeds 1,21,000 (5,500X22) hrs during the tenure of 22 years contract period, then consumable items (as declared by the bidder in the offer) will be arranged by the purchaser.

In accordance with the provisions of clauses C 7.2.2 and C 7.3.2 of the technical specifications the supplier shall guarantee that the availability of each equipment shall be not less than 85% (eighty-five percent) annually for a period of 1st to 6th year of operation, 84% (eighty-four percent) annually for a period of 7th to 11th year of operation, 83% (eighty-three percent) annually for a period of 12th to 16th year of operation and 82% (eighty-two percent) annually for a period of 17th to 22th year of operation from the accepted date of commissioning.

During contract period of 22 Years (264 Months) a period of 07 (Seven) days per year shall be allowed to equipment supplier in consultation with project Excavation head, in 5th to 22nd year for each machine for planned maintenance of equipment. This down time [maximum period of 07 (Seven) days] arising due to such maintenance of the equipment shall be treated as out of schedule for annual availability calculation in the relevant year. This period of 07 (Seven) days shall be provided once only in each applicable year and not in a staggered or partial manner. In case of any spillover of maintenance job(s) beyond such 07 (Seven) days period shall be treated as breakdown hours.

9. Expected life of major assemblies

Manufacturer shall give expected life of major assemblies also in the Format given in Table below, duly signed.

Table

EQUIPMENT	MAJOR ASSEMBLIES	EXPECTED LIFE* (in Hours)
Elect. Rope Shovels	AC Main Drive Motor	
	Undercarriage & steering system	
	Transmissions (Hoist, Swing, Crowd & Propel)	
	Transformer	
	Boom	
	Dipper handle	
	Dipper	
	Brakes	
	Track Chain	
	Track Rollers, Sprocket, Idler	
	Swing Roller & Swing Gear	
	Field Switch	

Note - * Expected life means life before first overhaul

10. Information to be provided by the supplier:

The supplier shall furnish the following information.

10.1 General:

a. Number of offered/similar model supplied during the last 10 years. The information shall be given in the following format and in the order of most recent first.

Company Name	Mine Name	Mine Location	Mine type	Sl No. of Machines	Model & Capacity	Commissioned date (DD/MM/YYYY)

The information in the above format should be self-certified.

b. Details of special tools to be provided with the equipment.
c. Details of erection programme for the bid.

10.2 Technical Details

a. Calculations and drawings verifying the dipper capacity clearly indicating the ISO or equivalent standard based on which calculation made.
b. i) Curve of KW- Time for the following operating cycle
   Load the dipper to rated capacity over the maximum working range, swing through an angle 90 degree, dump and return to dig.
   ii) Calculations for determining the time and hourly power consumption for the following operating cycle
   Load the dipper to rated capacity over the maximum working range, swing through an angle 90 degree, dump and return to dig.
c. Calculations and drawings, etc. verifying the maximum value of the ratio of the over turning moment to the resisting moment under the following operating conditions:
   i) Dipper at maximum force digging position with crawler tracks perpendicular to the face of the cut
   ii) Dipper at maximum force digging position with crawler tracks parallel to the face of the cut
d. Detailed mechanical and electrical descriptions and specifications of the shovel
e. Layout drawings and detail description of all machinery including method of power transmission, mounting details and method of alignment
f. Details of the type and method of drive systems offered
g. Performance curves of hoist, crowd, swing and propel motions
h. Schematic drawings of the automatic lubrication system, and the details of the supplier, number, type and function
i. Details of productivity and Health management System of the equipment

j. Details of major bought-out assemblies and sub-assemblies including manufacturer and complete addresses, type etc.
k. Operation and maintenance manuals in accordance with ISO 6750
l. Description of protection instruments and monitoring features of the supply circuits and drive system
m. Complete technical specification of all wire ropes including length, diameter, construction and lubrication.
n. Comprehensive commercial literature specification complying relevant ISO standard.

10.3 Dimensions, Weights and performance details

10.3.1 Working Ranges

a. Maximum cutting height (m)
b. Maximum cutting radius (m)
c. Maximum dumping height (m)
d. Dumping radius at maximum height (m)
e. Dumping height at maximum radius (m)
f. Dumping radius maximum (m)
g. Cutting depth below ground level (m)
h. Radius of clean up (m)

10.3.2 Basic Dimensions

a. Clearance radius, boom point (m)
b. Clearance height, boom point (m)
c. Clearance radius, rear (m)
d. Clearance under upper frame (m)
e. Clearance under lower frame (m)
f. Clearance height, gantry (m)
g. Clearance height, cab (m)
h. Clearance width, cab without walkways (m)
i. Operator's eye level height (m)
j. Ground to Boom foot pin (m)
k. Center of rotation to boom foot (m)

10.3.3 Machine Weights

a. Shipping weights of all separate components (kg)
b. Working weight (kg)
c. Ballast (kg)

10.3.4 Performance

a. Bail pull at peak power (kN)
b. Bail speed at peak power (m/sec)
c. Crowd force at peak power (kN)

d. Crowd speed at peak power (m/sec)
e. Maximum digging force (kN)
f. Reach at maximum digging force (m)
g. Swing torque at peak power (kNm)
h. Swing speed at peak power (rad/sec)
i. Maximum swing torque (kNm)
j. Tractive effort at peak power (kN)
k. Propel speed at peak power (m/sec)
l. Total cycle time (sec) 90^0 and 120^0swing

10.3.5 Power ratings

Power Voltages and frequency [indicating the fluctuations these can be subjected to]
Power factor at rated load

- Continuous motor kW ratings

  a. Hoist
  b. Crowd
  c. Swing
  d. Propel

- Peak Input power in kW

  a. Hoist
  b. Crowd
  c. Swing
  d. Propel

10.3.6 Dipper

a. Capacity (cu.m) and weight (kg)
b. Capacity range (cu.m)

10.3.7 Front End

a. Boom length, center to center (m) and weight (kg)
b. Dipper handle, effective length (m) and weight (kg)
c. Point sheave pitch diameter (m)

10.3.8 Crawler Mounting

a. Crawler length, standard (m)
b. Crawler width, standard(m)
c. Crawler belt width, standard (m)
d. Bearing area (m^2)
e. Bearing pressure (kPa)
f. load rollers, number per crawler

g. Load roller, diameter (m)
h. Driving sprocket, diameter (m)
i. front idler roller, diameter (m)
j. Center to center of sprockets and idler (m)
k. Crawler shoes width and total number
l. Gradeability (%)

10.3.9 Circle gear and roller path

a. Swing gear pitch diameter (m)
b. Width of teeth (m)
c. Roller path diameter (m)
d. Rollers, number and diameter (m)

10.3.10 Hoist

Hoist drum diameter (m)

10.3.11 General

a. Quantity, Size and specification of ballast required
b. Specifications of all wire ropes including length, diameter and construction
c. Details, number and location of fire extinguishers
d. Details of the basic functions of the Graphic User Interface (GUI) installed in the offered model.

Equipment Acceptance

The Equipment ordered will be finally accepted subject to the Supplier demonstrating to the Purchaser or its authorised representative (may be third party) that the equipment, or assembly or sub-assembly (selected at random by the Purchaser) when tested, meets the Performance Data provided by the Supplier in accordance with the requirements of clause 10. In case if testing facility for a particular parameter is not available at site, the Equipment ordered will finally be accepted subject to submission of Manufacturer's certified test copy for that parameter of performance data provided by the supplier in accordance with the requirements of clause 10. A detrimental deviation of up to 2½% will be accepted

1	Cycle Time at 90 deg swing	To be tested at project site after commissioning, under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
2	Hourly Power Consumption	To be tested at project site after on 30 (thirty) operating days' average immediately after commissioning under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
3	Hoist Performance, Crowd Performance, Swing Performance, Swing Loading and Propel Performance	To be tested by Equipment manufacturer and test data/report should be submitted.

PART D: EQUIPMENT SPECIFICATIONS

Equipment Specification of 15CuM Electric Hydraulic Face shovel
[Bucket Capacity Range: - 15CuM – 17CuM]

1. Scope of Specification

This specification is intended to cover the technical requirements for the design, manufacture, testing, delivery, on-site erection and commissioning of a self-propelled, crawler mounted electrically powered hydraulic face excavator withbucket capacity range **15CuM- 17CuM**.

2. References

The following International Standardsas per latest amendment are referred to in,and form part of, the Specification. The superseded or equivalent standards, if any, to any of the following ISO standards if offered are to be supported by documentary evidence in form of copies of the equivalent standards certifying that offered standards are identical to the corresponding ISO standards of NIT.

ISO 2867	Earth-moving machinery - Access systems
ISO 3457	Earth-moving machinery - Guards - Definitions and requirements
ISO 6014	Earth-moving machinery - Determination of ground speed
ISO 6015	Earth-moving machinery - Hydraulic excavators - Methods of measuring tool forces
ISO 6405-1	Earth-moving machinery - Symbols for operator controls and other displays - Part 1: Common symbols
ISO 6405-2	Earth-moving machinery - Symbols for operator controls and other displays - Part 2: Specific symbols for machines, equipment and accessories
ISO 6682	Earth-moving machinery – Zones of comfort and reach for controls
ISO 6750-1	Earth-moving machinery – Operator's Manual-Part I:Contents and Formats
ISO 6750-2	Earth-moving machinery- Operation and Maintenance-Operator's Manual-Part2: List of references.
ISO 7135	Earth-moving machinery - Hydraulic excavators - Terminology and commercial specifications
ISO 7546	Earth-moving machinery – Loader and front loading excavator buckets Volumetric ratings.
ISO 8643	Earth-moving machinery - Hydraulic excavator and back-hoe loader lowering control device - Requirements and tests.
ISO 10265	Earth-moving machinery – Crawler machines – Performance requirements and test procedures for braking systems
ISO 10968	Earth-moving machinery – Operator' controls
ISO 20474-1	Earth –moving machinery-safety- Part1: General requirement
ISO 20474-5	Earth –moving machinery-safety-Part 5 :Requirements for hydraulic excavators.

Other ISO standards mentioned in the specifications of individual system of the equipment.

3. Design Criteria

The excavator shall be capable of continuous digging for protracted periods on a system of 3 shifts each of 8 hours duration per day throughout the year in hard, highly abrasive, blasted sandstone/rock having average density after blasting of 1,800 kg/m^3.

The excavator shall be suitable for 2:1 heaped loading of Rear Dumpers of 150 T payload capacities.

3.1 Face Shovel Attachments

The excavator with Face Shovel attachment shall have the following working ranges:

a) Maximum cutting height not less than 13.50M
b) Maximum digging reach not less than 13.00 M
c) Maximum digging depth not less than 2.50 M
d) Maximum dumping height not less than10.00M
e) Operating weight of the machine not less than 240000 Kg

The bucket digging force measured in accordance with ISO 6015 should be not less than 25000kg/m of bucket width.

4. Mechanical Specification:

4.1 Bucket:

The excavator shall be supplied with a hard faced, heavy-duty rock Face Shovel bucket capacity **of range from 15CuM upto 17CuM** rated according to ISO 7546 / IS 12206.

The specific weight of the steel used in construction of bucket shall be not less than 7800 kg/m3. The tooth points and shanks (tooth adapters, if applicable)supplied with the bucket shall also be hard faced and should have proper, durable, easily removable and shock absorbing type attachment with the bucket.

4.2 Front End Equipment:

The boom and arm should be a rugged durable construction of high strength steel and free from any stress concentrations. The design must take care of all forces i.e. bending, torsion, compression, etc. encountered during operation of the equipment. Sealed bearings / bushings should be provided at pivot points.
The bucket attachment connecting pins shall be sealed and lubricated.

4.3 Hydraulic Drive System:

The excavator hydraulic system should be of proven design for efficient operations. The main hydraulic pumps shall be variable displacement type, hydraulic motors and cylinders should be field proven large heavy duty type and have suitable in-built protection from surge, cavitation, loss of oil due to hose leakage or burst, etc. As far as practicable reputable single make pumps, motors, cylinders and valves, etc. shall be used in the machine.

Adequate filtration of hydraulic oil shall be provided. The hydraulic tank shall be pressurized. An adequate and effective hydraulic oil cooling system shall also be provided. A transfer pump along with filtration unit shall be provided for filling of hydraulic oil in the tank.

Heat resistant / heat retardant hoses shall be fitted in heat zones. All hoses shall be grouped as far as possible and suitably clipped to reduce damage from scuffing and external damage

Hydraulic cylinder movement limiting provision / stopper and a boom lowering control system which complies with ISO 8643 shall be provided.

4.4 Swing System:

An independent hydraulic system should be provided for the swing motion.

Heavy duty Swing Circle with internal swing gear and pinion immersed in lubricant bath & dirt seals shall be provided. Swing Motor Brake should be provided

An upper structure swing lock/suitable arrangement to lock the upper structure shall be provided.

4.5 Propel and Steering:

Independent crawler drive with independent fail-safe braking system and hydraulically operated emergency and parking brakes which comply with ISO 10265 shall be provided.

4.6 Undercarriage:

The undercarriage shall be heavy duty and of sufficient strength to withstand the high loads, which may occur due to uneven, ground conditions. It shall be of welded construction and stress relieved asrequired.
The sprocket should be a single piece / segmented type. Lifetime lubricated, idler and rollers, and a reliable track tensioning arrangement should be provided.

Crawler shoes shall be heavy duty and designed for ease of replacement whenever necessary. The weight of the undercarriage should preferably be 30 to 45% of the operating weight of the machine.

4.7 Machinery House:

The excavator shall be provided with a machinery house made of steel sheeting supported by a steel structure and shall cover the Prime Mover & Drive System. It shall be designed to give ready and safe access to personnel & equipment for maintenance.
Non-slip type walkways and catwalks with handrails shall be provided in and around the machinery house, the operator's cab and service platforms and shall comply with ISO 2867.

4.8 Lubrication System:

A centralized PLC based electrically operated, double / single line (as per manufacturer system design) automatic lubrication system shall be provided to service all lubrication points on the machine including high viscosity lubrication points.

The lubrication system shall be fully monitored to ensure adequate lubricant flow is maintained to all points. The monitoring system shall, wherever possible, be interlocked with the relevant control circuits to prevent damage due to lack of lubrication at any point. Alarms and/ or indications for the failure of lubrication system shall be repeated on the instrument/ test panel. Flow of grease and pressure of the lubrication system shall be fully monitored through pressure switches to ensure that adequate lubricant flow is maintained to all major parts.

Lubricant containers of adequate size shall be located in a separate room / enclosure inside the machinery house / convenient location. Sufficient numbers of suitable capacity lubricating pumps shall be provided. The containers shall be fitted with suitable arrangement for cleaning and refilling or replacement with fresh new barrels.

All lubrication lines and injectors shall be protected from damage. Location of all injectors shall be such that these can be conveniently inspected and repaired. The lubrication lines to the boom point should be properly guided. Flexible lines shall only be used where there is relative movement between parts and for final connection to movable components. Steel piping shall be used for long runs and shall terminate in steel junction blocks to prevent disturbance to steel piping when flexible hoses are replaced.

Lubricants recommended shall be of reputed make with Indian equivalent.

4.9 Operator's Cab:

A fully insulated, high-visibility, rigidly mounted, sound-suppressed, vibration-suppressed, FOPS operator's cab with standard air conditioning system containing environmentally safe refrigerant, tinted safety glass should be so positioned to facilitate a clear and unrestricted view of the travel & work areas of the machine necessary for its intended use. The performance criteria shall be in accordance with ISO 5006. The sound level inside the cab shall be below 80dBA while the equipment is operating, and with the door closed.

All operating controls, all monitoring, working signals and emergency power isolation switch to trip the field switch should be conveniently located in consoles within easy reach of the operator and shall comply with ISO: 6405-1, ISO: 6405-2, ISO: 6682 & ISO: 10968. The operator's cab shall be provided with an emergency exit gate in addition to primary access path to the cabin.

The operator's seat shall be ergonomically designed suspension type, which can be adjusted for operator's height and weight. The seat shall provide vertical and fore / aft adjustment to allow custom fitting of the joysticks to individual operators for ease of operation. Seatbelt for operator with reminder shall be provided. The console shall have features an expandable media mounting post to which the Graphic User Interface (GUI) is mounted. The GUI shall have menus and information screens that allow the operator to display necessary basic information and perform various operation functions. Side / rear vision cameras shall be provided in the machine with remote display in operator's cab. The camera system shall also cover all the blind spots.

The air conditioner shall be heavy duty off-the-road equipment application type. The climate control ducting in the cab shall be located above and/ or below the operator. There should be

controls to allow regulation of air flow and auto - defrosting arrangement. A cooling fan and a blower type heater shall also be provided.

Horn / Alarm shall be provided on outer side of revolving frame, which shall be operated from operator's cab.

There should be a two-way communication system other than mobile between operator's cab and the machinery house.

4.10 Gauges and Indicators/Electronic Display:

The following shall be provided in Operator's Cabin:

a) Voltmeter
b) Ampere meter
c) Hour-meter
d) Hydraulic Oil Level Indicator
e) Hydraulic Oil Temperature Gauge
f) Motor Overload Indicator
g) Phase Failure Indicator
h) Phase sequence relay
i) Pilot Tripping
j) Motor's Power on/off

4.11 Warning Alarms:

Warning alarm shall be provided for the following in Operator's Cabin:

a. Hydraulic oil level
b. Hydraulic oil temperature
c. Microcomputer (if applicable)
d. Automatic lubrication
e. Trip Alarm for Main Motor
f. Hydraulic Oil Filter Clogging Indicator

4.12 Guards and Shields:

Adequate guards and shields which comply with ISO 3457 shall be provided throughout the excavator.

4.13 Automatic Fire Detection & Suppression System:

A suitable automatic fire detection and suppression system of reputed manufacturer (indigenous or imported), shall be provided on the equipment complying DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.

- Automatic fire detection and suppression system suitable for fire class A, B & C inside machinery house & below Deck of shovel.
- Bidder requires submitting a schematic drawing indicating Plan of the system with relative position of items to be protected from fire.

- Fire detection and suppression of fire may be either total gas flooding or dry chemical powder base spray through nozzle strategically through an actuation cartridge, located to the targets, or combination of the two.
- Fire suppression agent used in neighborhood of electrical appliances shall be clean and shall not damage electrical / electronic component.
- Fire suppression system shall be non-hazardous & safe for human and environment friendly. It should have quick cleanup and environmental sustainability.
- The sensor shall send the signal to the control unit integrated with a LED and/or alarm indicator to show the status of the detector.
- The system shall operate only in active fire zone and suitably designed to extinguish the fire as per class of fire (A, B & C) of that location.
- The system shall be actuated automatically by detection of fire and control unit to be installed within the Operator's cabin for automatic system operation.
- The system shall also have provision of actuating manually.
- The system shall provide facility for self-checking /testing/inspection without operating.
- The data regarding health & event shall be logged in the system with date & time, which can be downloaded to PC/ Laptop in latter stage with memory capacity to store data of at least 15days.
- The system should be capable for efficient operation in the extreme mining conditions with dust, dirt, water & vibrations.

The high pressure storage vessels and hoses, if used with fire- fighting and fire suppression systems, shall conform to the requirements stipulated in the relevant Indian standards.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for AFDSS including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013.Periodical refilling is to be done by the supplier.

4.14 Fire Extinguishers:

An adequate number of fire extinguishers shall be provided at strategic points on the shovel, suitably mounted in heavy-duty brackets for ease of removal.

The extinguishers shall be both dry chemical powder (DCP type) and CO_2 type with a minimum capacity of 5 kg and shall comply with Indian Standard IS: 15683 with latest amendment.
Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for Fire Extinguishers including Materials and Chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS Circular No. DGMS (Approval) Circular No. 02 dated 08th July 2013. Periodical refilling is to be done by the supplier.

5. Electrical Specification

5.1 Power Supply

The electrical power supply to the machine will be 6.6 kV (± 10%), 50 Hz (±3%), 3 phases (earthed neutral). This will be provided via a trailing cable from the mine electrical distribution network.

All high-tension electrical equipment shall have suitable insulation rating not less than 12 kV to protect against a rise in potential across any one phase of the supply.

An isolator switch shall be provided in the machine for disconnecting the main incoming supply line.

A high voltage distribution switchboard shall be provided to supply the various machine drive, control and auxiliary sub-circuits. Each switch forming part of the switchboard shall comprise an on-load isolator; an electrically closed and tripped, vacuum circuit breaker / vacuum contactor and fitted with protection against overload, short circuit and earth fault; and appropriate control push buttons, indicators and alarms. Indication of the state of the switch and any fault condition shall be provided on the front of the switch panel.

5.2 Prime Mover

The hydraulic power system shall be driven by squirrel cage electric motor of suitable rating not less than 850 KW**.** The motor shall be suitable for outdoor operation, self-cooled, continuous rated and dust proof with suitable ingress protection (IP) for the intended use. The Insulation class should be Class-F or above with Class-B temperature rise.

The electrical drive systems must be so designed that all the functions of the equipment have optimum output with high mechanical efficiency, low maintenance cost and improved maintainability and component life.

The electric motor shall be controlled from a suitably rated vacuum starter control panel providing overload, short circuit, single phase, earth fault, earth leakage and over &under voltage protection. Fault and circuit status indications shall be provided on the starter control panel.

The motor shall be capable of being remotely started from a control/instrument panel located in the machinery house / operators cab. A remote stop facility shall be provided in the operator's cab.

The control circuits for each drive shall be housed in a steel cabinet provided with internal illumination. The cabinets shall be dust and vermin proof.

Anti-condensation heaters shall be fitted to all major drives and electrical cabinets wherever applicable.

All control circuits shall operate at 24V DC or 110/ 220 V AC, single-phase 50Hz. with earthed

neutral. The electrical supply for other items shall be 24V DC or 440 / 415V, 3 phase, 50Hz or 220 / 110Volts, 50Hz, single phase with earthed neutral as appropriate.

Control circuit transformers shall be protected on their primary side by isolation switches and fuses. Control circuits shall be protected on one side of the transformer by a fuse with the opposite side connected to earth.

All cables used in the machine shall be of the fire resistant type.

5.3 Trailing Cable

The shovel shall be provided with 300 meters of 6.6 kV, 6 core trailing cable of adequate cross section in relation to the rating of machine and the 50 degree C ambient temperature and supply should be as per Indian Electricity rule clause 123, sub-clause 1 & 6. The cable shall be of the flexible type suitable for use with open pit mining machinery.

The cable shall have 3 power cores of equal adequate cross section individually screened with metallic ATC (Annealed tinned copper) wire or specially designed formulated semi-conducting compound, 2 earth cores of equal cross section of minimum size of 50% of size of power core and one pilot core. The cable should have minimum insulation level of 12 kV.

The shovel shall be provided with a weatherproof box termination for trailing cable.

5.4 Power Factor Correction and Harmonic Suppression:

The electrical circuit shall include suitable arrangements for power factor correction to ensure that the average power factor over the whole cycle is above 0.9 lag.
The electrical circuits shall have adequately designed harmonics suppression networks or control schemes for reducing harmonics and transients to acceptable levels as per IEEE Standard 519.

5.5 Field Switch

The shovel should be provided with a skid-mounted field switch. The switch shall be of robust construction suitable for the rugged terrain and the mining conditions for which it will be used. It shall also be dust and vermin proof and protected to withstand torrential monsoon rains. Proper illumination shall be provided within the enclosure.

The switchgear should be of vacuum circuit breaker type with symmetrical rupturing capacity of 150MVA at 6.6 kV. The field switch shall also have earth fault, overload, short circuit, over voltage, under voltage, single phase, earth leakage and reverse phase sequence protection relays. In an emergency, it should be possible to trip the field switch from operator's cabin by a push button switch and through inbuilt remote sensor. Provision to trip VCB mechanically and electrically shall also be provided.

Suitable arrangement shall be provided to suppress the damaging over voltage due to switching transients and lighting peaks.

Suitable facilities shall be provided for the termination of supply cables by plug & socket type cable coupler arrangement. Earth connection stud shall be provided on each terminal box and on the main body of the switch casing. It shall be possible to feed through the switch to other similar units. Blank plates and adapters shall be provided to safely seal the feed- through termination against the elements when not in use.

The HV junction Box shall be interlocked with tripping circuit of field switch and HT Isolator panel shall be mounted / placed in such a way that it should be easily accessible for the purpose of maintenance, repair and operation in compliance with Indian Electricity Rules and DGMS circulars.

5.6 Lighting

Adequate LED flood lighting and illumination at strategic points both outside and inside of the shovel shall be provided for visual observation and night shift operation. The lighting fixtures shall be supplied at 220/110 V fed from main / auxiliary transformer (star point grounded) or 24V D.C. Earth leakage protection is to be provided with lighting circuit breaker.

5.7 Transformers

All transformers shall be of reputed manufacturer, suitably rated for the duty specified and the operating environment. The transformers shall be delta-star connected with star points earthed for earth fault protection.

5.8 Safety Features

All safety features & devices as per Govt. Of India Gazette notification no. Z 20045/01/2018/S&T (HQ) dated 01.10.2018, DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020 and subsequent amendments, if any,including following shall be provided in the equipment. Bidder shall submit a Certificate as an undertaking in this regard that all safety features and devices are incorporated in the equipment.

a. All function cut off switch.
b. Swing Motor Brake.
c. Fire resistant / fire retarder hydraulic hoses in place of ordinary hoses to reduce the chances of fire. All the sleeves and conduits in which cable/wire are laid shall be of fire resistant type.
d. Seat Belt with seat belt reminder.
e. Vent valve, if applicable on top of hydraulic tank should be able to be removed without any tool.
f. A baffle plate between cold zone and hot zone (if applicable)
g. Provision for limiting of hydraulic cylinder-Stopper

6. Ancillary Equipment and Other Requirements:

The following are to be provided with the excavator:

a. Hydraulic jack 100 T – 2 nos

b. Hydraulic pressure gauge
c. One set Pneumatic Tool of oneinch drive of reputed make.
d. Adequate 440V/415V (+/- 10%) three phases 50 Hz (+/- 3%) welding power outlet suitably located so that welding can be carried out any point on the excavator.
e. Adequate 24V DC or 220V/110V single phase, hand held inspection outlets, portable hand lamps and all necessary supporting equipment.
f. A 220V/110V single phase, portable electric blower with suction attachment of reputed make.
g. The equipment should be supplied along with first fill of all Oils, Grease and Lubricants required for successful commissioning of the equipment.

7. Productivity & Health monitoring system:

The equipment shall be provided with suitable licensed, on-line, real time, monitoring interface facility, compatible for GPS-based transfer of equipment performance data (commonly known as PMS and HMS) to third party equipment management system.

The system shall have measuring points and self data capturing facility for followings -

i) Working hour, idle hour, based on the duration of a shift for which the equipment is switched on for operation.
ii) Cumulative qty. of material handled (both in terms of Cu. M. & No. of buckets)
iii) Average cycle time for each day
iv) Average swing angle per day
v) Incoming voltage, current, power consumption, frequency and power factor.
vi) Hydraulic oil pressure, temperature, viscosity and water content
vii) All drive motors / transformer vital parameters
viii) Preventive maintenance parameters
ix) Predictive health monitoring parameters.
x) Additional parameters as per requirement of equipment manufacturer / user

This system shall have suitable memory capacity to store all captured vital parameter data in 6 hours or less interval batch form and all real time exception / error data for at least 30 days period and shall have suitable port to download these data to a laptop / data storage system.

The supplier shall provide the following:

1. There has to be one integrated single online port for capturing all the vital data.
2. The real time interface telemetry port will be provided in the equipment.
3. All the data shall be available in the individual form through single port and its communication protocol must be as per global standards.
4. There shall be no additional requirement of any data converter for data capturing like Analog to Digital and vice-versa etc.
5. There shall be integrated on board data management system as explained at point no.3 as above.
6. Permission to third party for interfacing, data collection through online port.
7. Signing of Non-disclosure agreement to protect intellectual property right on either side.

8. To provide full technical support to third party vendor for interpretation and defining parameters for individual alarm to monitor equipment vital data.
9. The HEMM equipment supplier should provide access to data as required by end user without any financial implication to third party.

This interface facility shall be made available till the working life of equipment.
However, the supplier shall provide this interface facility during the contract period as a part of contract cost.

To ensure the satisfactory operation of above system, a tripartite agreement shall be signed by the user, supplier and the service provider of OITDS / System Integrator.

8. Performance Guarantee

In accordance with the provisions of clause C 6.2.6 of the technical specifications the expected working hours per annum are 5000 (five thousand) hours. The expected working hours per annum as indicated are only approximate hours and may vary +/- 500 hours. The expected average working hours per annum as indicated are only approximate hours and may vary $\pm$ 500 hours. Total duration of contract will be 180 months irrespective of working hour. In case, actual working hour exceeds 82,500 (5500x15)hrs during the tenure of 15 years contract period, then consumable items (as declared by the bidder in the offer) will be arranged by the purchaser.

In accordance with the provisions of clauses C 7.2.2 and C 7.3.2 of the technical specifications the supplier shall guarantee that the availability of each equipment shall be not less than 85% (eighty-five percent) annually for a period of 1st to 5th year of operation, 84% (eighty-four percent) annually for a period of 6th to 10th year of operation and 83% (eighty-three percent) annually for a period of 11th to 15th year of operation from the accepted date of commissioning.

9. Expected life of major assemblies

Manufacturer shall give expected life of major assemblies also in the Format given in Table below, duly signed.

Table

EQUIPMENT	MAJOR ASSEMBLIES	EXPECTED LIFE* (in Hours)
Hydraulic Shovel	Prime Mover (Elect.)	
	Under carriage	
	Hydraulic pump	
	Hydraulic motor	
	Hydraulic Cylinders	
	Hydraulic control valve	
	Boom & Sticks	
	Bucket (Dipper)	
	Other Electrical items	

Note - * Expected life means life before first overhaul

10. Information To Be Provided By The Supplier:

The Supplier shall furnish the following information. All technical information shall be in SI units.

10.1 General:

a) Number of similar model supplied during the last ten years.

The information shall be given in the following format and in the order of most recent first:

Company Name	Mine Name	Mine Location	Mine type	Sl No. of Machines	Model & Capacity	Commissioned date (DD/MM/YYYY)

The information in the above format should be self-certified.

b) Detail list of special tools, which shall be provided with the equipment for maintenance, erection & commissioning of the equipment. The firm shall give an undertaking that the listed tools shall be sufficient for the purpose. If any additional tool is required, that shall be provided as per requirement.

c) Details of erection programmes for the bid.

10.2 Technical Details:

a. Volumetric rating of the bucket according to ISO 7546 together with verification calculations and drawings (refer clause 4.1)

b. Maximum bucket and arm cylinder digging forces measured according to ISO 6015

c. Schematic drawing of the machine showing the position of the Center of Gravity and it's distance from the Central Axis of Rotation under the following operating conditions:

i. Bucket at maximum digging force position with crawler tracks perpendicular to the face of the cut.

ii. Bucket at maximum digging force position with crawler tracks parallel to the face of the cut.

d. Details of electric drive control systems, including circuit diagrams, motor details and transformer specifications.

e. Calculation for determining the time for operating cycle.

i. Load the bucket to rated capacity over the maximum working range, swing through an angle of 90 degree,dump and return to dig.

ii. Hourly power consumption for the above operating cycle.

f. Maximum Detailed technical descriptions of each system of the Excavator.

g. Layout drawings and detailed description of all hydraulic systems and components.
h. Comprehensive commercial literature indicating therein complete technical specifications, the content of which must comply with ISO 7135.
i. Schematic and layout drawings, details of the supplier, number, function and type of Automatic Centralized Lubrication System.
j. Schematic and layout drawings and details of the Supplier, number, function and type of Automatic fire detection and suppression System.
k. Details of major bought-out assemblies and sub-assemblies indicating make, type, manufacturer's complete address etc.
l. Operation and Maintenance Manuals in accordance with ISO 6750, with copies in CDs as stipulated in clause A.3

10.3 Dimensions, Weights and Performance Details:

10.3.1 Working Ranges:

a) Maximum digging height (m)
b) Maximum digging reach (m)
c) Maximum digging depth (m)
d) Minimum dumping height (m)
e) Reach at maximum digging force (m)

10.3.2 Dimensions

10.3.2.1 Basic machine

a) Upper structure overall width (m)
b) Upper structure overall width, with catwalks (m)
c) Upper structure rear end swing radius (m)
d) Height to top of FOPS (m)
e) Clearance under upper structure (m)
f) Undercarriage overall width (m)
g) Crawler overall length (m)
h) Crawler tracks height (m)

10.3.2.2 Front End Attachment:

a) Bucket width (m)
b) Boom length with specified bucket (m)
c) Arm length with specified bucket (m)

10.3.3 Weights:

a) Shipping weight of all separate components (kg)
b) Bucket total weight (kg)
c) Bucket specific weight (kg/cum)
d) Weight of undercarriage (kg)
e) Total working/ operatingweight (kg)

10.3.4 Performance details:

a) Swing speed (r / min)
b) Travel speed (m/sec)
c) Gradeability(%)

10.3.5 Hydraulic System:

a) Make, Model, number, flow rates and operating pressures of pumps
b) Make, Model, number and ratings of motors
c) Make, Model, number, piston diameters and stroke lengths of cylinders
d) Relief valve operating pressures (kPa)

10.3.6 Undercarriage:

a) Crawler width (m)
b) Crawler shoes width and total number
c) Centre to centre of idler roller and sprocket (m)
d) Ground contact area (sq.m)
e) Ground bearing pressure (kPa)
f) Load rollers, diameter and number per crawler
g) Driving sprocket diameter (m)
h) Idler roller diameter (m)

Equipment Acceptance

The Equipment ordered will be finally accepted subject to the Supplier demonstrating to the Purchaser or its authorised representative (may be third party) that the equipment, or assembly or sub-assembly (selected at random by the Purchaser) when tested, meets the Performance Data provided by the Supplier in accordance with the requirements of clause 10. In case if testing facility for a particular parameter is not available at site, the Equipment ordered will finally be accepted subject to submission of Manufacturer's certified test copy for that parameter of performance data provided by the supplier in accordance with the requirements of clause 10. A detrimental deviation of up to 2½% will be accepted

1	Cycle Time at 90 deg swing	To be tested at site after commissioning, under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
2	Hourly Power Consumption	To be tested at site after on 30 (thirty) operating days' average immediately after commissioning under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
3	Digging Forces	Manufacturer's test certificate to be furnished

PART D: - EQUIPMENT SPECIFICATIONS

Equipment Specification of Electric Hydraulic Face Shovel of bucket capacity not less than 10CuM

[Bucket Capacity Range: - above 10CuM – upto12 Cu M]

1. Scope of Specification

This specification is intended to cover the technical requirements for the design, manufacture, testing, delivery, on-site erection and commissioning of a self-propelled, crawler mounted electrically powered hydraulic excavator with bucket capacity of above 10CuM – upto 12CuM Face Shovel.

2. References

The following International Standardsas per latest amendment are referred to in, the Specification. The superseded or equivalent standards, if any, to any of the following ISO standards if offered are to be supported by documentary evidence in form of copies of the equivalent standards certifying that offered standards are identical to the corresponding ISO standards of NIT.

ISO 2867	Earth-moving machinery - Access systems
ISO 3457	Earth-moving machinery - Guards- Definitions and requirements
ISO 6014	Earth-moving machinery - Determination of ground speed
ISO 6015	Earth-moving machinery - Hydraulic excavators - Methods of measuring tool forces
ISO 6405-1	Earth-moving machinery - Symbols for operator controls and other displays - Part 1: Common symbols
ISO 6405-2	Earth-moving machinery - Symbols for operator controls and other displays - Part 2: Specific symbols for machines, equipment and accessories
ISO 6682	Earth-moving machinery – Zones of comfort and reach for controls
ISO 6750-1	Earth-moving machinery – Operator's Manual-Part I: Contents and Formats
ISO 6750-2	Earth-moving machinery- Operation and Maintenance-Operator's Manual-Part2: List of references.
ISO 7135	Earth-moving machinery - Hydraulic excavators - Terminology and commercial specifications
ISO 7546	Earth-moving machinery – Loader and front loading excavator buckets Volumetric ratings.
ISO 8643	Earth-moving machinery - Hydraulic excavator and back-hoe loader lowering control device - Requirements and tests
ISO 10265	Earth-moving machinery – Crawler machines – Performance requirements and test procedures for braking systems
ISO 10968	Earth-moving machinery – Operator' controls
ISO 20474-1	Earth –moving machinery-safety- Part1: General requirement
ISO 20474-5	Earth –moving machinery-safety-Part 5 :Requirements for hydraulic excavators.

Other ISO standards mentioned in the specifications of individual system of the equipment.

3. Design Criteria

The excavator shall be capable of continuous digging for protracted periods on a system of 3 shifts each of 8 hours duration per day throughout the year in hard, highly abrasive, blasted sandstone/rock having average density after blasting of 1,800 kg/m3.

The excavator shall be suitable for 2:1 heaped loading of Rear Dumpers of 100 T capacities.

3.1 Face Shovel Attachments

The excavator with Face Shovel attachment shall have the following working ranges:

a. Maximum cutting height not less than 14.00 m
b. Maximum digging reach not less than 13.00 m
c. Maximum digging depth not less than 3.00 m
d. Maximum dumping height not less than 8.35m
e. Operating weight of the m/c not less than170000 Kg

The bucket digging force measured in accordance with ISO 6015 should be not less than 22000kg/m of bucket width.

4. Mechanical Specification:

4.1 Bucket:

The excavator shall be supplied with a hard faced, heavy-duty rock Face Shovel bucket of **above 10CuM – upto 12CuM** bucket capacity, rated according to ISO 7546The actual volumetric capacity calculated as per ISO 7546 or its equivalent standard should be in between above 10CuM and 12 CuM.

The specific weight of the steel used in construction of bucket shall be not less than 7800 kg/m3.

The tooth points and shanks (tooth adapters, if applicable) supplied with the bucket shall also be hard faced and should have proper, durable, easily removable and shock absorbing type attachment with the bucket.

4.2 Front End Equipment:

The boom and arm should be a rugged durable construction of high strength steel and free from any stress concentrations. The design must take care of all forces i.e. bending, torsion, compression, etc. encountered during operation of the equipment. Sealed bearings / bushings should be provided at pivot points.
The bucket attachment connecting pins shall be sealed and lubricated.

4.3 Hydraulic Drive System:

The excavator hydraulic system should be of proven design for efficient operations. The main hydraulic pumps shall be variable displacement type, hydraulic motors and cylinders should be field proven large heavy duty type and have suitable in-built protection from surge, cavitation,

loss of oil due to hose leakage or burst, etc. As far as practicable reputable single make pumps, motors, cylinders and valves, etc. shall be used in the machine.

Adequate filtration of hydraulic oil shall be provided. The hydraulic tank shall be pressurized. An adequate and effective hydraulic oil cooling system shall also be provided.A transfer pump along with filtration unit shall be provided for filling of hydraulic oil in the tank.

Heat resistant / heat retardant hoses shall be fitted in heat zones. All hoses shall be grouped as far as possible and suitably clipped to reduce damage from scuffing and external damage

Hydraulic cylinder movement limiting provision / stopper and a boom lowering control system which complies with ISO 8643 shall be provided.

4.4 Swing System:

An independent hydraulic system should be provided for the swing motion.

Heavy duty Swing Circle with internal swing gear and pinion immersed in lubricant bath & dirt seals shall be provided. Swing Motor Brake should be provided

An upper structure swing lock/suitable arrangement to lock the upper structure shall be provided.

4.5 Propel and Steering:

Independent crawler drive with independent fail-safe braking system and hydraulically operated emergency and parking brakes which comply with ISO 10265 shall be provided.

4.6 Undercarriage:

The undercarriage shall be heavy duty and of sufficient strength to withstand the high loads which may occur due to uneven ground conditions. It shall be of welded construction and stress relieved as required.

The sprocket should be a single piece / segmented type. Lifetime lubricated, idler and rollers, and a reliable track tensioning arrangement should be provided.

Crawler shoes shall be heavy duty and designed for ease of replacement whenever necessary.

4.7 Machinery House:

The excavator shall be provided with a machinery house made of steel sheeting supported by a steel structure and shall cover the Prime Mover & Drive System. It shall be designed to give ready and safe access to personnel & equipment for maintenance.

Non-slip type walkways and catwalks with handrails shall be provided in and around the machinery house, the operator's cab and service platforms and shall comply with ISO 2867.

4.8 Lubrication System:

A centralized PLC based electrically operated, double / single line (as per manufacturer system design) automatic lubrication system shall be provided to service all lubrication points on the machine including high viscosity lubrication points.

The lubrication system shall be fully monitored to ensure adequate lubricant flow is maintained to all points. The monitoring system shall, wherever possible, be interlocked with the relevant control circuits to prevent damage due to lack of lubrication at any point. Alarms and indications for failure of lubrication system shall be provided andshall be repeated on the instrument/ test panel.

Lubricant containers of adequate size shall be located in a separate room / enclosure inside the machinery house / convenient location. Sufficient numbers of suitable capacity lubricating pumps shall be provided. The containers shall be fitted with suitable arrangement for cleaning and refilling or replacement with fresh new barrels.

All lubrication lines and injectors shall be protected from damage. Location of all injectors shall be such that these can be conveniently inspected and repaired. The lubrication lines to the boom point should be properly guided. Flexible lines shall only be used where there is relative movement between parts and for final connection to movable components. Steel piping shall be used for long runs and shall terminate in steel junction blocks to prevent disturbance to steel piping when flexible hoses are replaced.

Lubricants recommended shall be of reputed make with Indian equivalent.

4.9 Operator's Cab:

A fully insulated, high-visibility, rigidly mounted, sound-suppressed, vibration-suppressed, FOPS operator's cab with standard air conditioning system containing environmentally safe refrigerant, tinted safety glass should be so positioned to facilitate a clear and unrestricted view of the travel & work areas of the machine necessary for its intended use. The performance criteria shall be in accordance with ISO 5006. The sound level inside the cab shall be below 80dBA while the equipment is operating, and with the door closed.

All operating controls, all monitoring, working signals and emergency power isolation switch to trip the field switch should be conveniently located in consoles within easy reach of the operator and shall comply with ISO: 6405-1, ISO: 6405-2, ISO: 6682 & ISO: 10968. The operator's cab shall be provided with an emergency exit gate in addition to primary access path to the cabin.

The operator's seat shall be ergonomically designed suspension type, which can be adjusted for operator's height and weight. The seat shall provide vertical and fore / aft adjustment to allow custom fitting of the joysticks to individual operators for ease of operation. Seatbelt for operator with reminder shall be provided. The console shall have features an expandable media mounting post to which the Graphic User Interface (GUI) is mounted. The GUI shall have menus and information screens that allow the operator to display necessary basic information and perform various operation functions. Side / rear vision cameras shall be provided in the

machine with remote display in operator's cab. The camera system shall also cover all the blind spots.

The air conditioner shall be heavy duty off-the-road equipment application type. The climate control ducting in the cab shall be located above and/ or below the operator. There should be controls to allow regulation of air flow and auto - defrosting arrangement. A cooling fan and a blower type heater shall also be provided.

Horn / Alarm shall be provided on outer side of revolving frame, which shall be operated from operator's cab.

There should be a two-way communication system other than mobile between operator's cab and the machinery house.

4.10 Gauges and Indicators/Electronic Display:

The following shall be provided in Operator's Cabin:

a) Voltmeter
b) Ampere meter
c) Hour-meter
d) Hydraulic Oil Level Indicator
e) Hydraulic Oil Temperature Gauge
f) Motor Overload Indicator
g) Phase Failure Indicator

4.11 Warning Alarms:

Warning alarm shall be provided for the following in Operator's Cabin:

a. Hydraulic oil level
b. Hydraulic oil temperature
c. Microcomputer (if applicable)
d. Automatic lubrication
e. Trip Alarm for Main Motor
f. Hydraulic Oil Filter Clogging Indicator

4.12 Guards and Shields:

Adequate guards and shields which comply with ISO 3457 shall be provided throughout the excavator.

4.13 Automatic Fire Detection & Suppression System:

A suitable automatic fire detection and suppression system of reputed manufacturer (indigenous or imported), shall be provided on the equipment complying DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.

- Automatic fire detection and suppression system suitable for fire class A, B & C inside machinery house & below Deck of shovel.
- Bidder requires submitting a schematic drawing indicating Plan of the system with relative position of items to be protected from fire.
- Fire detection and suppression of fire may be either total gas flooding or dry chemical powder base spray through nozzle strategically through an actuation cartridge, located to the targets, or combination of the two.

- Fire suppression agent used in neighborhood of electrical appliances shall be clean and shall not damage electrical / electronic component.
- Fire suppression system shall be non-hazardous & safe for human and environment friendly. It should have quick cleanup and environmental sustainability.
- The sensor shall send the signal to the control unit integrated with a LED and/or alarm indicator to show the status of the detector.
- The system shall operate only in active fire zone and suitably designed to extinguish the fire as per class of fire (A, B & C) of that location.
- The system shall be actuated automatically by detection of fire and control unit to be installed within the Operator's cabin for automatic system operation.
- The system shall also have provision of actuating manually.
- The system shall provide facility for self-checking /testing/inspection without operating.
- The data regarding health & event shall be logged in the system with date & time, which can be downloaded to PC/ Laptop in latter stage with memory capacity to store data of at least 15days.
- The system should be capable for efficient operation in the extreme mining conditions with dust, dirt, water & vibrations.

The high pressure storage vessels and hoses, if used with fire- fighting and fire suppression systems, shall conform to the requirements stipulated in the relevant Indian standards.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for AFDSS including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013.Periodical refilling is to be done by the supplier.

4.14 Fire Extinguishers:

An adequate number of fire extinguishers shall be provided at strategic points on the shovel, suitably mounted in heavy-duty brackets for ease of removal.

The extinguishers shall be both dry chemical powder (DCP type) and CO_2 type with a minimum capacity of 5 kg and shall comply with Indian Standard IS: 15683 with latest amendment.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for fire extinguisher including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013. Periodical refilling is to be done by the supplier.

5. Electrical Specification

5.1 Power Supply

The electrical power supply to the machine will be 6.6 kV (± 10%), 50 Hz (±3%), 3 phases

(earthed neutral). This will be provided via a trailing cable from the mine electrical distribution network.

All high-tension electrical equipment shall have suitable insulation rating not less than 12 kV to protect against a rise in potential across any one phase of the supply.

An isolator switch shall be provided in the machine for disconnecting the main incoming supply line.

A high voltage distribution switchboard shall be provided to supply the various machine drive, control and auxiliary sub-circuits. Each switch forming part of the switchboard shall comprise an on-load isolator; an electrically closed and tripped, vacuum circuit breaker / vacuum contactor and fitted with protection against overload, short circuit and earth fault; and appropriate control push buttons, indicators and alarms. Indication of the state of the switch and any fault condition shall be provided on the front of the switch panel.

5.2 Prime Mover

The hydraulic power system shall be driven by squirrel cage electric motor(s) of suitable rating not less than 600 KW. The motor shall be suitable for outdoor operation, self-cooled, continuous rated and dust proof with suitable ingress protection (IP) for the intended use. The Insulation class should be Class-F or above with Class-B temperature rise.

The electrical drive systems must be so designed that all the functions of the equipment have optimum output with high mechanical efficiency, low maintenance cost and improved maintainability and component life.

The electric motor shall be controlled from a suitably rated vacuum starter control panel providing overload, short circuit, single phase, earth fault, earth leakage and over & under voltage protection. Fault and circuit status indications shall be provided on the starter control panel.

The motor shall be capable of being remotely started from a control/instrument panel located in the machinery house / operators cab. A remote stop facility shall be provided in the operator's cab.

The control circuits for each drive shall be housed in a steel cabinet provided with internal illumination. The cabinets shall be dust and vermin proof.

Anti-condensation heaters shall be fitted to all major drives and electrical cabinets wherever applicable.

All control circuits shall operate at 24V DC or 110/ 220 V AC, single-phase 50Hz. with earthed neutral. The electrical supply for other items shall be 24V DC or 440 / 415V, 3 phase, 50Hz or 220 / 110Volts, 50Hz, single phase with earthed neutral as appropriate.

Control circuit transformers shall be protected on their primary side by isolation switches and fuses. Control circuits shall be protected on one side of the transformer by a fuse with the opposite side connected to earth.

All cables used in the machine shall be of the fire resistant type.

5.3 Trailing Cable

The shovel shall be provided with 300 meters of 6.6 kV, 6 core trailing cable of adequate cross section in relation to the rating of machine and the 50 degree C ambient temperature and supply

should be as per Indian Electricity rule clause 123, sub clause 1 & 6. The cable shall be of the flexible type suitable for use with open pit mining machinery.

The cable shall have 3 power cores of equal adequate cross section individually screened with metallic ATC (Annealed tinned copper) wire or specially designed formulated semi-conducting compound, 2 earth cores of equal cross section of minimum size of 50% of size of power core and one pilot core. The cable should have minimum insulation level of 12 kV.

The shovel shall be provided with a weatherproof box termination for trailing cable.

5.4 Power Factor Correction and Harmonic Suppression:

The electrical circuit shall include suitable arrangements for power factor correction to ensure that the average power factor over the whole cycle is above 0.9 lag.
The electrical circuits shall have adequately designed harmonics suppression networks or control schemes for reducing harmonics and transients to acceptable levels as per IEEE Standard 519.

5.5 Field Switch

The shovel should be provided with a skid-mounted field switch. The switch shall be of robust construction suitable for the rugged terrain and the mining conditions for which it will be used. It shall also be dust and vermin proof and protected to withstand torrential monsoon rains. Proper illumination shall be provided within the enclosure.

The switchgear should be of vacuum circuit breaker type with symmetrical rupturing capacity of 150MVA at 6.6 kV. The field switch shall also have earth fault, overload, short circuit, over voltage, under voltage, single phase, earth leakage and reverse phase sequence protection relays. In an emergency it should be possible to trip the field switch from operator's cabin by a push button switch and through inbuilt remote sensor. Provision to trip VCB mechanically and electrically shall also be provided.

Suitable arrangement shall be provided to suppress the damaging over voltage due to switching transients and lighting peaks.

Suitable facilities shall be provided for the termination of supply cables by plug & socket type cable coupler arrangement. Earth connection stud shall be provided on each terminal box and on the main body of the switch casing. It shall be possible to feed through the switch to other similar units. Blank plates and adapters shall be provided to safely seal the feed- through termination against the elements when not in use.

The HV junction Box shall be interlocked with tripping circuit of field switch and HT Isolator panel shall be mounted / placed in such a way that it should be easily accessible for the purpose of maintenance, repair and operation in compliance with Indian Electricity Rules and DGMS circulars.

5.6 Lighting

Adequate LED flood lighting and illumination at strategic points both outside and inside of the shovel shall be provided for visual observation and night shift operation. The lighting fixtures shall be supplied at 220/110 V fed from main / auxiliary transformer (star point grounded) or 24V DC. Earth leakage protection is to be provided with lighting circuit breaker.

5.7 Transformers

All transformers shall be of reputed manufacturer, suitably rated for the duty specified and the operating environment. The transformers shall be delta-star connected with star points earthed for earth fault protection.

5.8 Safety Features

All safety features & devices as per Govt. Of India Gazette notification no. Z 20045/01/2018/S&T (HQ) dated 01.10.2018, DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020 and subsequent amendments, if any,including following shall be provided in the equipment. Bidder shall submit a Certificate as an undertaking in this regard that all safety features and devices are incorporated in the equipment.

a. All function cut off switch.
b. Swing Motor Brake.
c. Fire resistant / fire retarder hydraulic hoses in place of ordinary hoses to reduce the chances of fire. All the sleeves and conduits in which cable/wire are laid shall be of fire resistant type.
d. Two-point Seat Belt with reminder
e. Vent valve, if applicable on top of hydraulic tank should be able to be removed without any tool.
f. A baffle plate between cold zone and hot zone
g. Provision for limiting of hydraulic cylinder-Stoppers

6. Ancillary Equipment and Other Requirements:

The following are to be provided with the excavator:

a. Hydraulic jack 100 T – 2 nos.
b. Hydraulic pressure gauges with adopters, sockets suitable for checking Hyd.Pressure in the equipment
c. One set Pneumatic Tool of one-inch drive of reputed make.
d. Adequate 440V/415V (+/- 10%) three phases 50 Hz (+/- 3%) welding power outlet suitably located so that welding can be carried out any point on the excavator.
e. Adequate 24V DC or 220V/110V single phase, hand held inspection outlets, portable hand lamps and all necessary supporting equipment.
f. A 220V/110V single phase, portable electric blower with suction attachment of reputed make.
g. The equipment should be supplied along with first fill of all Oils, Grease and Lubricants required for successful commissioning of the equipment.

7. Productivity & Health monitoring system:

The equipment shall be provided with suitable licensed, on-line, real time, monitoring interface facility, compatible for GPS-based transfer of equipment performance data (commonly known as PMS and HMS) to third party equipment management system.

The system shall have measuring points and self data capturing facility for followings -

i) Working hour, idle hour, based on the duration of a shift for which the equipment is switched on for operation.
ii) Cumulative qty. of material handled (both in terms of Cu. M. & No. of buckets)
iii) Average cycle time for each day
iv) Average swing angle per day
v) Incoming voltage, current, power consumption, frequency and power factor.
vi) Hydraulic oilpressure, temperature, viscosity and water content
vii) All drive motors / transformer vital parameters
viii) Preventive maintenance parameters
ix) Predictive health monitoring parameters.
x) Additional parameters as per requirement of equipment manufacturer / user

This system shall have suitable memory capacity to store all captured vital parameter data in 6 hours or less interval batch form and all real time exception / error data for at least 30 days period and shall have suitable port to download these data to a laptop / data storage system.

The supplier shall provide the following:

1. There has to be one integrated single online port for capturing all the vital data
2. The real time interface telemetry port will be provided in the equipment
3. All the data shall be available in the individual form through single port and its communication protocol must be as per global standards.
4. There shall be no additional requirement of any data converter for data capturing like Analog to Digital and vice-versa etc.
5. There shall be integrated on board data management system as explained at point no.3 as above.
6. Permission to third party for interfacing, data collection through online port.
7. Signing of Non-disclosure agreement to protect intellectual property right on either side.
8. To provide full technical support to third party vendor for interpretation and defining parameters for individual alarm to monitor equipment vital data.
9. The HEMM equipment supplier should provide access to data as required by end user without any financial implication to third party.

This interface facility shall be made available till the working life of equipment.
However, the supplier shall provide this interface facility during the contract period as a part of contract cost.

To ensure the satisfactory operation of above system, a tripartite agreement shall be signed by the user, supplier and the service provider of OITDS / System Integrator.

8. Performance Guarantee

In accordance with the provisions of clause C 6.2.6 of the technical specifications the expected working hours per annum are 5000 (five thousand) hours. The expected working hours per annum as indicated are only approximate hours and may vary +/- 500 hours.

The expected average working hours per annum as indicated are only approximate hours and may vary ± 500 hours. Total duration of contract will be 120 months irrespective of working hour. . In case, actual working hour exceeds 55,000 (5,500x10) hrs during the tenure of 10 years contract period, then consumable items (as declared by the bidder in the offer) will be arranged by the purchaser.

In accordance with the provisions of clauses C 7.2.2 and C 7.3.2 of the technical specifications the supplier shall guarantee that the availability of each equipment shall be not less than 85% (eighty-five percent) annually for a period of 1st to 5th year of operation and 84% (eighty-four percent) annually for a period of 6th to 10th year of operation from the accepted date of commissioning.

9. Expected life of major assemblies

Manufacturer shall give expected life of major assemblies also in the Format given in Table below, duly signed.

Table

EQUIPMENT	MAJOR ASSEMBLIES	EXPECTED LIFE* (in Hours)
Hydraulic Shovel	Prime Mover (Elect.)	
	Under carriage	
	Hydraulic pump	
	Hydraulic motor	
	Hydraulic Cylinders	
	Hydraulic control valve	
	Boom & Sticks	
	Bucket (Dipper)	
	Other Electrical items	

Note - * Expected life means life before first overhaul

10. Information to Be Provided by The Supplier:

The Supplier shall furnish the following information. All technical information shall be in SI units.

10.1 General:

a. Number of similar model supplied during the last ten years.
The information shall be given in the following format and in the order of most recent first.

Company Name	Mine Name	Mine Location	Mine type	Sl No. of Machines	Model & Capacity	Commissioned date (DD/MM/YYYY)

The information in the above format should be self certified.

b. Details of special tools to be provided with the equipment for maintenance, erection & commissioning of the equipment. The firm shall give an undertaking that the listed tools shall be sufficient for the purpose and if any additional tool is required, that shall be provided as per requirement.
c. Details of erection programmes for the bid.

10.2 Technical Details:

a) Volumetric rating of the bucket according to ISO 7546 together with verification calculations and drawings (refer clause 4.1).
b) Maximum bucket and arm cylinder digging forces measured according to ISO 6015.
c) Schematic Drawing of the machine showing the position of the Center of Gravity and it's distance from the Central Axis of Rotation under the following operating conditions:

   i. Bucket at maximum digging force position with crawler tracks perpendicular to the face of the cut.
   ii. Bucket at maximum digging force position with crawler tracks parallel to the face of the cut.

d) Details of electric drive control systems, including circuit diagrams, motor details and transformer specifications.
e) Calculation for determining the time for operating cycle.

   i. Load the bucket to rated capacity over the maximum working range, swing through an angle of 90 degree, dump and return to dig.
   ii. Hourly power consumption for the above operating cycle.

f) Detailed technical descriptions of each system of the Excavator.
g) Layout drawings and detailed description of all hydraulic systems and components.
h) Comprehensive commercial literature indicating therein complete technical specifications, the content of which must comply with ISO 7135.
i) Schematic and layout drawings, details of the supplier, number, function and type of Automatic Centralized Lubrication System.

j) Schematic and layout drawings and details of the Supplier, number, function and type of Automatic fire detection and suppression System.

k) Details of major bought-out assemblies and sub-assemblies indicating make, type, manufacturer's complete address etc.

l) Operation and Maintenance Manuals in accordance with ISO 6750, with copies in CDs as stipulated in clause A.3

10.3 Dimensions, Weights and Performance Details:

10.3.1 Working Ranges:

a. Maximum digging height (m)\
b. Maximum digging reach (m)
c. Maximum digging depth (m)
d. Minimum dumping height (m)
e. Reach at maximum digging force (m)

10.3.2 Dimensions

10.3.2.1 Basic machine

a. Upper structure overall width (m)
b. Upper structure overall width, with catwalks (m)
c. Upper structure rear end swing radius (m)
d. Height to top of FOPS (m)
e. Clearance under upper structure (m)
f. Undercarriage overall width (m)
g. Crawler overall length (m)
h. Crawler tracks height (m)

10.3.2.2 Front End Attachment :

a. Bucket width (m)
b. Boom length with specified bucket (m)
c. Arm length with specified bucket (m)

10.3.3 Weights:

a) Shipping weight of all separate components (kg)
b) Bucket total weight (kg)
c) Bucket specific weight (kg/cum)
d) Weight of undercarriage (kg)
e) Total working/operating weight (kg)

10.3.4 Performance details:

a) Swing speed (r / min)
b) Travel speed (m/sec)
c) Gradeability(%)

10.3.5 Hydraulic System:

a) Make, Model, number, flow rates and operating pressures of pumps
b) Make, Model, number and ratings of motors
c) Make, Model, number, piston diameters and stroke lengths of cylinders
d) Relief valve operating pressures (kPa)

10.3.6 Undercarriage:

a) Crawler width (m)
b) Crawler shoes width and total number
c) Centre to centre of idler roller and sprocket (m)
d) Ground contact area (sq.m)
e) Ground bearing pressure (kPa)
f) Load rollers, diameter and number per crawler
g) Driving sprocket diameter (m)
h) Idler roller diameter (m)

Equipment Acceptance

The Equipment ordered will be finally accepted subject to the Supplier demonstrating to the Purchaser or its authorised representative (may be third party) that the equipment, or assembly or sub-assembly (selected at random by the Purchaser) when tested, meets the Performance Data provided by the Supplier in accordance with the requirements of clause 10. In case if testing facility for a particular parameter is not available at site, the Equipment ordered will finally be accepted subject to submission of Manufacturer's certified test copy for that parameter of performance data provided by the supplier in accordance with the requirements of clause 10. A detrimental deviation of up to 2½% will be accepted.

1	Cycle Time at 90 deg swing	To be tested at site after commissioning, under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
2	Hourly Power Consumption	To be tested at site after on 30 (thirty) operating days' average immediately after commissioning under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
3	Digging Forces	Manufacturer's test certificate to be furnished

PART D: - EQUIPMENT SPECIFICATIONS

Equipment Specification of 10-12cum Diesel Hydraulic Face Shovel

[Bucket Capacity Range: - above 10CuM – upto12 Cu M]

1. Scope of Specification

This specification is intended to cover the technical requirements for the design, manufacture, testing, delivery, on-site erection and commissioning of a self-propelled, crawler mounted Diesel powered Hydraulic Face excavator with bucket capacity above 10 CuM – upto12 CuM.

2. References

The following International Standards as per latest amendment are referred to in, the Specification. The superseded or equivalent standards, if any, to any of the following ISO standards if offered are to be supported by documentary evidence in form of copies of the equivalent standards certifying that offered standards are identical to the corresponding ISO standards of NIT.

ISO 2867	Earth-moving machinery - Access systems
ISO 3457	Earth-moving machinery - Guards - Definitions and requirements
ISO 6014	Earth-moving machinery - Determination of ground speed
ISO 6015	Earth-moving machinery - Hydraulic excavators - Methods of measuring tool forces
ISO 6405-1	Earth-moving machinery - Symbols for operator controls and other displays - Part 1: Common symbols
ISO 6405-2	Earth-moving machinery - Symbols for operator controls and other displays - Part 2: Specific symbols for machines, equipment and accessories
ISO 6682	Earth-moving machinery – Zones of comfort and reach for controls
ISO 6750-1	Earth-moving machinery – Operator's Manual-Part I: Contents and Formats
ISO 6750-2	Earth-moving machinery- Operation and Maintenance-Operator's Manual-Part2: List of references
ISO 7135	Earth-moving machinery - Hydraulic excavators - Terminology and commercial specifications
ISO7546	Earth-moving Machinery-Loader and front loading excavator buckets Volumetric ratings.
ISO 8643	Earth-moving machinery - Hydraulic excavator and back-hoe loader lowering control device - Requirements and tests.
ISO 9249	Earth-moving machinery –Engine test Code-Net power.
ISO 10265	Earth-moving machinery – Crawler machines – Performance requirements and test procedures for braking systems.
ISO 10968	Earth-moving machinery – Operator' controls
ISO 20474-1	Earth –moving machinery-safety- Part1: General requirement
ISO 20474-5	Earth –moving machinery-safety-Part 5 : Requirements for hydraulic excavators.

Other ISO standards mentioned in the specification of individual system of the equipment

3. Design Criteria

The excavator shall be capable of continuous digging for protracted periods on a system of 3 shifts each of 8hours duration per day throughout the year in hard, highly abrasive, blasted sandstone/rock having average density after blasting of 1,800 kg/m3.
The excavator shall be suitable for 2:1 heaped loading of Rear Dumpers of 100 T capacities.

3.1 Face Shovel Attachments

The excavator with Face Shovel attachment shall have the following working ranges:

a. Maximum cutting height not less than 14.00 m
b. Maximum digging reach not less than 13.00 m
c. Maximum digging depth not less than 3.00 m
d. Maximum dumping height not less than 8.35m
e. Operating weight of the m/c not less than170000kg

The bucket digging force measured in accordance with ISO 6015 should be not less than 22000 kg/m of bucket width.

4. Mechanical Specification:

4.1 Bucket:

The excavator shall be supplied with a hard faced, heavy-duty rock Face Shovel of bucket capacity above 10CuM – upto12CuM according to ISO 7546.The actual volumetric capacity calculated as per ISO 7546 or its equivalent standard should be in between above 10CuM and 12 CuM.

The specific weight of the steel used in construction of bucket shall be not less than 7800 kg/m3.

The tooth points supplied with the bucket shall also be hard faced and should have proper, durable, easily removable and shock absorbing type attachment with the bucket.

4.2 Front End Equipment:

The boom and arm should be a rugged durable construction of high strength steel and free from any stress concentrations. The design must take care of all forces i.e. bending, torsion, compression, etc. encountered during operation of the equipment. Sealed bearings / bushings should be provided at pivot points.

The bucket attachment connecting pins shall be sealed and lubricated.

4.3. Engine:

The back-hoe excavator shall be powered by a direct injection 4-stroke Diesel Engine(s) of not less than 650**kW net power** measured at 2000 r/min according to ISO 9249. The engine shall be provided with 24V electrical starting, dry type 2 stage air cleaner with dust evacuator, dust level indicator and 2 stage fuel filter with water separator.

The engine shall have a water jacket cooling system, thermo-statically controlled, using an engine driven water pump, with the cooling water re-circulated through a heavy-duty radiator.

The system shall be capable of providing sufficient cooling to allow the dumper to continuously operate at full rated output at the maximum ambient temperature. The radiator cap shall be fastened with body with the help of suitable capacity chain/locking arrangement.

The moving parts of the engine shall be lubricated by an engine driven oil pump with full flow oil filtration and cooling.

The engine shall be provided with a heavy-duty pan guard as per manufacturer design.

The engine is to be environmentally certified for minimum **BS VI** or equivalent or as per applicable notifications of Govt. of India, fuel efficient having fully integrated electronically controlled monitoring system & real-time self-diagnostic features with built in protections. The Engine electronic control module should be fully integrated with all systems of power train for all operating conditions and be capable to monitor operator's and sensors inputs for optimum engine performance & reduced emissions level.

A suitable electronic tool (laptop) loaded with compatible software and all related accessories shall be provided equipment wise along with special tools for retrieval and analysis of the recorded critical parameters of self-diagnostic features, real time monitoring and equipment health-monitoring systems fitted with the equipment. The supplier shall also be required to provide readable reports downloaded from each Equipment.

Compatible Software loaded in electronic tool (Laptop) should be warranted for entire contract period or more.

4.4 Hydraulic Drive System:

The excavator hydraulic system should be of proven design for efficient operations. The main hydraulic pumps shall be variable displacement type, motors, and cylinders should be field proven large heavy duty type and have suitable in-built protection from surge, cavitation, loss of oil due to hose leakage or burst, etc. As far as practicable reputable single make pumps, motors, cylinders and valves, etc. shall be used in the machine.

Adequate filtration of hydraulic oil shall be provided. The hydraulic tank preferably be pressurized. An adequate and effective hydraulic oil cooling system shall also be provided. A transfer pump along with filtration unit shall be provided for filling of hydraulic oil in the tank.

Heat resistant / heat retardant hoses shall be fitted in heat zones. All hoses shall be grouped as far as possible and suitably clipped to reduce damage from scuffing and external damage

Hydraulic cylinder movement limiting provision / stopper and a boom lowering control system which complies with ISO 8643 shall be provided.

4.5 Swing System:

An independent hydraulic system should be provided for the swing motion.
Heavy duty Swing Circle with internal swing gear and pinion immersed in lubricant bath & dirt seals shall be provided. Swing Motor Brake should be provided.

A suitable upper structure swing locking arrangement shall be provided.

4.6 Propel and Steering:

Independent crawler drive with independent fail-safe braking system and hydraulically operated emergency and parking brakes which comply with ISO 10265 shall be provided.

4.7 Undercarriage:

The undercarriage shall be heavy duty and of sufficient strength to withstand the high loads which may occur due to uneven ground conditions. It shall be of welded construction and stress relieved as required.

The sprocket should be a single piece / segmented type. Lifetime lubricated, idler and rollers, and a reliable track tensioning arrangement shall be provided.

Crawler shoes shall be heavy duty and designed for ease of replacement whenever necessary.

4.8 Machinery House:

The excavator shall be provided with a machinery house made of steel sheeting supported by a steel structure and shall cover the engine & drive system. It shall be designed to give ready and safe access to personnel & equipment for maintenance.

Non-slip type walkways and catwalks with handrails shall be provided in and around the machinery house, the operator's cab and service platforms and shall comply with ISO 2867.

4.9 Lubrication System:

A centralized PLC based electrically operated, double / single line (as per manufacturer system design) automatic lubrication system shall be provided to service all lubrication points on the machine including high viscosity lubrication points.

The lubrication system shall be fully monitored to ensure adequate lubricant flow is maintained to all points. The monitoring system shall, wherever possible, be interlocked with the relevant control circuits to prevent damage due to lack of lubrication at any point. Alarms and indications for failure of lubrication system shall be provided andshall be repeated on the instrument/ test panel.

Lubricant containers of adequate size shall be located in a separate room / enclosure inside the machinery house / convenient location and be large enough to cater lubrication needs for continuous operation between refills. Sufficient numbers of suitable capacity lubricating pumps shall be provided. The containers shall be fitted with suitable arrangement for cleaning and refilling or replacement with fresh new barrels.

All lubrication lines and injectors shall be protected from damage. Location of all injectors shall be such that these can be conveniently inspected and repaired. The lubrication lines to the boom point should be properly guided. Flexible lines shall only be used where there is relative movement between parts and for final connection to movable components. Steel piping shall be used for long runs and shall terminate in steel junction blocks to prevent disturbance to steel piping when flexible hoses are replaced. Lubricants recommended shall be of reputed make with Indian equivalent.

4.10 Operator's Cab:

A fully insulated, high-visibility, rigidly mounted, sound-suppressed, vibration-suppressed, FOPS operator's cab with standard air conditioning system containing environmentally safe refrigerant, tinted safety glass should be so positioned to facilitate a clear and unrestricted view of the travel & work areas of the machine necessary for its intended use. The performance criteria shall be in accordance with ISO 5006. The sound level inside the cab shall be below 80dBA while the equipment is operating, and with the door closed.

All operating controls, all monitoring, working signals should be conveniently located in consoles within easy reach of the operator and shall comply with ISO: 6405-1, ISO: 6405-2, ISO: 6682 & ISO: 10968. The operator's cab shall be provided with an emergency exit gate in addition to primary access path to the cabin.

The operator's seat shall be ergonomically designed suspension type, which can be adjusted for operator's height and weight. The seat shall provide vertical and fore / aft adjustment to allow custom fitting of the joysticks to individual operators for ease of operation. Seatbelt for operator with reminder shall be provided. The console shall have features an expandable media mounting post to which the Graphic User Interface (GUI) is mounted. The GUI shall have menus and information screens that allow the operator to display necessary basic information and perform various operation functions. Side / rear vision cameras shall be provided in the machine with remote display in operator's cab. The camera system shall also cover all the blind spots.

The air conditioner shall be heavy duty off-the-road equipment application type. The climate control ducting in the cab shall be located above and/ or below the operator. There should be controls to allow regulation of air flow and auto - defrosting arrangement. A cooling fan and a blower type heater shall also be provided.

Horn / Alarm shall be provided on outer sides of revolving frame, which shall be operated from operator's cab.

There should be a two-way communication system other than mobile between operator's cab and the machinery house.

4.11 Gauges and Indicators/Electronic Display:

The following shall be provided:

a) Water temperature gauge
b) Engine oil pressure gauge/indicator
c) Fuel capacity gauge
d) Engine tachometer
e) Engine hour-meter
f) Low engine lube oil pressure indicator

4.12 Warning Alarms:

Warning alarm shall be provided for the following:

a. Engine oil level
b. Radiator coolant level
c. Hydraulic oil level
d. Air cleaner element
e. Engine oil pressure
f. Engine water temparature
g. Hydraulic oil temperature
h. Fuel level
i. Microcomputer (if applicable)
j. Automatic lubrication
k. P.T.O lubrication (if applicable)

4.13 Electrical Equipment:

The excavator shall be provided with the following:

a. 24V DC electrical system with suitably rated alternator of reputable make
b. Reputed make Electric start motor
c. Reputable make high capacity maintenance free batteries
d. Battery isolation switch / relay.

All electrical circuits shall be protected by adequately rated fuses/MCBs, which shall be easily accessible for maintenance.

4.14 Lighting:

Adequate LED flood lighting and illumination at strategic points both outside and inside of the machine shall be provided for visual observation and night shift operation.

4.15 Guards and Shields:

Adequate guards and shields which comply with ISO 3457 shall be provided throughout the excavator.

4.16 Automatic Fire Detection & Suppression System:

A suitable automatic fire detection and suppression system of reputed manufacturer (indigenous or imported), shall be provided on the equipment complying DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.

- Automatic fire detection and suppression system suitable for fire class A, B & C inside machinery house & below Deck of shovel.
- Bidder requires submitting a schematic drawing indicating Plan of the system with relative position of items to be protected from fire.
- Fire detection and suppression of fire may be either total liquid flooding or dry chemical powder base spray through nozzle strategically through an actuation cartridge, located to the targets, or combination of the two.
- Fire suppression agent used in neighborhood of electrical appliances shall be clean and shall not damage electrical / electronic component.
- Fire suppression system shall be non-hazardous & safe for human and environment friendly. It should have quick cleanup and environmental sustainability.
- The sensor shall send the signal to the control unit integrated with a LED and/or alarm indicator to show the status of the detector.

- The system shall operate only in active fire zone and suitably designed to extinguish the fire as per class of fire (A, B & C) of that location.
- The system shall be actuated automatically by detection of fire and control unit to be installed within the Operator's cabin for automatic system operation.
- The system shall also have provision of actuating manually.
- The system shall provide facility for self-checking /testing/inspection without operating.
- The data regarding health & event shall be logged in the system with date & time, which can be downloaded to PC/ Laptop in latter stage with memory capacity to store data of at least 15days.
- The system should be capable for efficient operation in the extreme mining conditions with dust, dirt, water & vibrations.

The high pressure storage vessels and hoses, if used with fire- fighting and fire suppression systems, shall conform to the requirements stipulated in the relevant Indian standards.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for AFDSS including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013.Periodical refilling is to be done by the supplier.

4.17 Fire Extinguishers:

An adequate number of fire extinguishers shall be provided at strategic points on the shovel, suitably mounted in heavy-duty brackets for ease of removal.

The extinguishers shall be both dry chemical powder (DCP type) and CO_2 type with a minimum capacity of 5 kg and shall comply with Indian Standard IS: 15683 with latest amendment.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for Fire Extinguishers including Materials and Chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS Circular No. DGMS (Approval) Circular No. 02 dated 08th July 2013.

4.18 Safety Features

All safety features & devices as per Govt. Of India Gazette notification no. Z 20045/01/2018/S&T (HQ) dated 01.10.2018, DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020 and subsequent amendments, if any, including following shall be provided in the equipment. Bidder shall submit a Certificate as an undertaking in this regard that all safety features and devices are incorporated in the equipment.

a. All function cut off switch.
b. Thermal insulationblanket on exhaust side of Engine

c. Hydraulic oil and air filter clogging indicators.
d. Swing Motor Brake.
e. Heat resistant / Heat retarder hydraulic hoses in place of ordinary hoses to reduce the chances of fire. All the sleeves and conduits in which cable/wire are laid shall be of fire resistant type.
f. Turbocharger guard.
g. Two point Seat Belt with reminder
h. Vent valve, if applicable on top of hydraulic tank should be able to be removed without any tool.
i. A baffle plate between cold zone and hot zone
j. Provision for limiting of hydraulic cylinder- Stoppers

5. Ancillary Equipment and Other Requirements:

The following are to be provided with the excavator:

a. Hydraulic jack 100 T – 2 nos.
b. Hydraulic pressure gauges with adopters, sockets suitable for checking Hyd. Pressure in the equipment
c. One set Pneumatic Tool of one inch drive of reputed make
d. Multi meter for measuring electrical & electronic circuit values provided in the equipment

6. Productivity & Health monitoring system:

The equipment shall be provided with suitable licensed, on-line, real time, monitoring interface facility, compatible for GPS-based transfer of equipment performance data (commonly known as PMS and HMS) to third party equipment management system.

The system shall have measuring points and self data capturing facility for followings -

i) Working hour, idle hour, based on the duration of a shift for which the equipment is switched on for operation.
ii) Cumulative qty. of material handled (both in terms of Cu. M. & No. of buckets)
iii) Average cycle time for each day
iv) Average swing angle per day
v) Engine oil pressure & temperature
vi) Engine RPM
vii) Coolant level & Coolant temperature
viii) Fuel level
ix) Hydraulic oil pressure, temperature, viscosity and water content
x) Hydraulic oil level indication
xi) Battery Voltage
xii) Alternator output
xiii) Fault codes along with details
xiv) Preventive maintenance parameters
xv) Predictive health monitoring parameters.

xvi) Additional parameters as per requirement of equipment manufacturer / user

This system shall have suitable memory capacity to store all captured vital parameter data in 6 hours or less interval batch form and all real time exception / error data for at least 30 days period and shall have suitable port to download these data to a laptop / data storage system.

The supplier shall provide the following:

1. There has to be one integrated single online port for capturing all the vital data.
2. The real time interface telemetry port will be provided in the equipment
3. All the data shall be available in the individual form through single port and its communication protocol must be as per global standards.
4. There shall be no additional requirement of any data converter for data capturing like Analog to Digital and vice-versa etc.
5. There shall be integrated on board data management system as explained at point no.3 as above.
6. Permission to third party for interfacing, data collection through online port.
7. Signing of Non-disclosure agreement to protect intellectual property right on either side.
8. To provide full technical support to third party vendor for interpretation and defining parameters for individual alarm to monitor equipment vital data.
9. The HEMM equipment supplier should provide access to data as required by end user without any financial implication to third party.

This interface facility shall be made available till the working life of equipment.
However, the supplier shall provide this interface facility during the contract period as a part of contract cost.

To ensure the satisfactory operation of above system, a tripartite agreement shall be signed by the user, supplier and the service provider of OITDS / System Integrator.

7. Performance Guarantee

In accordance with the provisions of clause C 6.2.6 of the technical specifications the expected working hours per annum are 5000 (five thousand) hours. The expected working hours per annum as indicated are only approximate hours and may vary +/- 500 hours.

The expected average working hours per annum as indicated are only approximate hours and may vary $\pm$ 500 hours. Total duration of contract will be 120 months irrespective of working hour. . In case, actual working hour exceeds 55,000 (5,500x10) hrs during the tenure of 10 years contract period, then consumable items (as declared by the bidder in the offer) will be arranged by the purchaser.

In accordance with the provisions of clauses C 7.2.2 and C 7.3.2 of the technical specifications the supplier shall guarantee that the availability of each equipment shall be not less than 85% (eighty-five percent) annually for a period of 1^{st} to 5^{th} year of operation and 84% (eighty-four percent) annually for a period of 6^{th} to 10^{th} year of operation from the accepted date of commissioning.

8. Expected life of major assemblies

Manufacturer shall give expected life of major assemblies also in the Format given in Table below, duly signed.

Table

EQUIPMENT	MAJOR ASSEMBLIES (whichever is applicable)	EXPECTED LIFE* (in Hours)
Hydraulic Shovels	Prime Mover (Diesel)	
	Under carriage	
	Hydraulic pump	
	Hydraulic motor	
	Hydraulic Cylinders	
	Hydraulic control valve	
	Boom & Sticks	
	Bucket (Dipper)	
	Other Electrical items	

Note - * Expected life means life before first overhaul

9. Information to be Provided by The Supplier:

The Supplier shall furnish the following information. All technical information shall be in SI units.

9.1 General:

a. Number of similar model supplied during the last ten years.
The information shall be given in the following format and in the order of most recent first:

Company Name	Mine Name	Mine Location	Mine type	Sl No. of Machines	Model & Capacity	Commissioned date (DD/MM/YYYY)

The information in the above format should be self-certified.

b. Details of special tools to be provided with the equipment for maintenance, erection & commissioning of the equipment. The firm shall give an undertaking that the listed tools shall be sufficient for the purpose and if any additional tool is required, that shall be provided as per requirement

c. Details of erection programmes for the bid.

9.2 Technical Details:

a) Volumetric rating of the bucket according to ISO 7546 together with verification calculations and drawings (refer clause 4.1).

b) Maximum bucket and arm cylinder digging forces measured according to ISO 6015.

c) Schematic Drawing of the machine showing the position of the Center of Gravity and it's distance from the Central Axis of Rotation under the following operating conditions:

   i. Bucket at maximum digging force position with crawler tracks perpendicular to the face of the cut.

   ii. Bucket at maximum digging force position with crawler tracks parallel to the face of the cut.

d) Engine performance curves of net power, net torque and specific fuel consumption measured according to ISO 9249 along with test bed data.

e) Calculation for determining the time for operating cycle.

   i. Load the bucket to rated capacity over the maximum working range, swing through an angle of 90 degree, dump and return to dig.

   ii. Hourly power consumption for the above operating cycle.

f) Detailed technical descriptions of each system of the Excavator.

g) Layout drawings and detailed description of all hydraulic systems and components.

h) Comprehensive commercial literature indicating therein complete technical specifications, the content of which must comply with ISO 7135.

i) Schematic and layout drawings, details of the supplier, number, function and type of Automatic Centralized Lubrication System.

j) Schematic and layout drawings and details of the Supplier, number, function and type of Automatic fire detection and suppression System.

k) Details of major bought-out assemblies and sub-assemblies indicating make, type, manufacturer's complete address etc.

l) Operation and Maintenance Manuals in accordance with ISO 6750, with copies in CDs as stipulated in clause A.3

9.3 Dimensions, Weights and Performance Details:

9.3.1 Working Ranges:

a. Maximum digging height (m)
b. Maximum digging reach (m)
c. Maximum digging depth (m)
d. Minimum dumping height (m)
e. Reach at maximum digging force (m)

9.3.2 Dimensions

9.3.2.1 Basic machine

a. Upper structure overall width (m)
b. Upper structure overall width, with catwalks (m)
c. Upper structure rear end swing radius (m)
d. Height to top of FOPS (m)
e. Clearance under upper structure (m)
f. Undercarriage overall width (m)
g. Crawler overall length (m)
h. Crawler tracks height (m)

9.3.2.2 Front End Attachment:

a. Bucket width (m)
b. Boom length with specified bucket (m)

Arm length with specified bucket (m)

9.3.3 Weights:

a) Shipping weight of all separate components (kg)
b) Bucket total weight (kg)
c) Bucket specific weight (kg/cum)
d) Weight of undercarriage (kg)
e) Total working/operating weight (kg)

9.3.4 Performance details:

a) Swing speed (r / min)
b) Travel speed (m/sec)
c) Gradeability (%)

9.3.5 Engine:

a) Manufacturer and model
b) Number of cylinders
c) Bore (mm)
d) Stroke (mm)
e) Displacement (litre)
f) ISO net power at.....r/min
g) Maximum torque at ……..r/min (Nm)

9.3.6 Hydraulic system:

a) Make, Model, number, flow rates and operating pressures of pumps
b) Make, Model, number and ratings of motors
c) Make, Model, number, piston diameters and stroke lengths of cylinders
d) Relief valve operating pressures (kPa)

9.3.7 Undercarriage:

a) Crawler width (m)
b) Crawler shoes width and total number
c) Centre to centre of idler roller and sprocket (m)
d) Ground contact area (sq.m)
e) Ground bearing pressure (kPa)
f) Load rollers, diameter and number per crawler

g) Driving sprocket diameter (m)
h) Idler roller diameter (m)

9.3.8 Electrical System:

a) Starter make and model
b) Starter control make and model
c) Alternator make and model
d) Batteries, numbers and rating
e) Lighting details

Equipment Acceptance

The Equipment ordered will be finally accepted subject to the Supplier demonstrating to the Purchaser or its authorised representative (may be third party) that the equipment, or assembly or sub-assembly (selected at random by the Purchaser) when tested, meets the Performance Data provided by the Supplier in accordance with the requirements of clause 9. In case if testing facility for a particular parameter is not available at site, the Equipment ordered will finally be accepted subject to submission of Manufacturer's certified test copy for that parameter of performance data provided by the supplier in accordance with the requirements of clause 9. A detrimental deviation of up to 2½% will be accepted

1	Cycle Time at 90 deg swing	To be tested at site after commissioning, under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
2	Hourly Fuel Consumption	To be tested at site after on 30 (thirty) operating days' average immediately after commissioning under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
3	Digging Forces	Manufacturer's test certificate to be furnished
4. Engine Net Power & RPM		To be tested at Works / site as per ISO 9249. *(*Equipment manufacturer's Test data/report should be submitted.*)*

PART D: - EQUIPMENT SPECIFICATIONS

Equipment Specification of 10-12CuM Diesel Hydraulic Backhoe Shovel

[Bucket Capacity Range: - above 10CuM – upto 12 Cu M]

1. Scope of Specification

This specification is intended to cover the technical requirements for the design, manufacture, testing, delivery, on-site erection and commissioning of a self-propelled, crawler mounted Diesel powered hydraulic excavator with bucket capacity above 10CuM – upto12 CuM Back Hoe Shovel.

2. References

The following International Standardsas per latest amendment are referred to in, and form part of, the Specification. The superseded or equivalent standards, if any, to any of the following ISO standards if offered are to be supported by documentary evidence in form of copies of the equivalent standards certifying that offered standards are identical to the corresponding ISO standards of NIT.

ISO 2867 Earth-moving machinery - Access systems
ISO 3457 Earth-moving machinery - Guards - Definitions and requirements
ISO 6014 Earth-moving machinery - Determination of ground speed
ISO 6015 Earth-moving machinery - Hydraulic excavators and back-hoe loaders-Method of determining tool forces
ISO 6405-1 Earth-moving machinery - Symbols for operator controls and other displays - Part 1: Common symbols
ISO 6405-2 Earth-moving machinery - Symbols for operator controls and other displays - Part 2: Symbols forspecific machines, equipment and accessories
ISO 6682 Earth-moving machinery – Zones of comfort and reach for controls
ISO 6750 -1 Earth-moving machinery- Operator's Manual Part 1: Contents and Formats
ISO 6750 -2 Earth-moving machinery –Operation and Maintenance –Operator's Manual Part2: List of references.
ISO 7135 Earth-moving machinery - Hydraulic excavators - Terminology and commercial specifications
ISO7451 Earth-moving machinery -Volumetric ratings for hoe-type and grab-type buckets of hydraulic excavators and back-hoe loaders.
ISO 8643 Earth-moving machinery - Hydraulic excavator and back-hoe loader ~~boom~~ lowering control device - Requirements and tests
ISO 9249 Earth-moving machinery –Engine test code-Net power.
ISO 10265 Earth-moving machinery – Crawler machines – Performance requirements and test procedures for braking systems
ISO 10968 Earth-moving machinery – Operator' controls
ISO 20474-1 Earth –moving machinery-safety- Part1: General requirement
ISO 20474-4 Earth –moving machinery-safety- Part 4: Requirement for back-hoe loaders.
Other ISO standards mentioned in the specifications of individual system of the equipment.

3. Design Criteria

The excavator shall be capable of continuous digging for protracted periods on a system of 3 shifts each of 8 hours duration per day throughout the year in hard, highly abrasive, blasted sandstone/rock having average density after blasting of 1,800 kg/m3.
The excavator shall be suitable for 2:1 heaped loading of Rear Dumpers of 100 T capacities.

3.1 Back Hoe Attachments

The excavator with Back Hoe Shovel attachment shall have the following working ranges:

a. Maximum digging height not less than 13.40 m
b. Maximum digging reach not less than 15.00 m
c. Maximum digging depth not less than 8.00 m
d. Maximum dumping height not less than 8.50 m
e. Operating Weight of the m/c not less than170000 Kg

The bucket digging force measured in accordance with ISO 6015 should be not less than 22000kg/m of bucket width.

4. Mechanical Specification:

4.1 Bucket:

The excavator shall be supplied with a hard faced, heavy-duty rock Backhoe Shovel bucket capacity above 10CuM – upto12CuM according to ISO 7451.The actual volumetric capacity calculated as per ISO 7451 or its equivalent standard should be in between above 10CuM and 12 CuM.

The specific weight of the steel used in construction of bucket shall be not less than 7800 kg/m3. The tooth points supplied with the bucket shall also be hard faced and should have proper, durable, easily removable and shock absorbing type attachment with the bucket.

4.2 Front End Equipment:

The boom and arm should be a rugged durable construction of high strength steel and free from any stress concentrations. The design must take care of all forces i.e. bending, torsion, compression, etc. encountered during operation of the equipment. Sealed bearings / bushings should be provided at pivot points.
The bucket attachment connecting pins shall be sealed and lubricated.

4.3. Engine:

The back-hoe excavator shall be powered by a direct injection 4-stroke Diesel Engine(s) of not less than **650 KW net power** measured at 2000 r/min according to ISO 9249. The engine shall be provided with 24V electrical starting, dry type 2 stage air cleaner with dust evacuator, dust level indicator and 2 stage fuel filter with water separator.

The engine shall have a water jacket cooling system, thermo-statically controlled, using an engine driven water pump, with the cooling water re-circulated through a heavy-duty radiator. The system shall be capable of providing sufficient cooling to allow the dumper to continuously operate at full rated output at the maximum ambient temperature. The radiator cap shall be fastened with body with the help of suitable capacity chain/locking arrangement.

The moving parts of the engine shall be lubricated by an engine driven oil pump with full flow oil filtration and cooling.

The engine shall be provided with a heavy-duty pan guard as per manufacturer design.

The engine is to be environmentally certified for minimum **BS VI** or equivalent or as per applicable notifications of Govt. of India, fuel efficient having fully integrated electronically controlled monitoring system & real-time self-diagnostic features with built in protections. The Engine electronic control module should be fully integrated with all systems of power train for all operating conditions and be capable to monitor operator's and sensors inputs for optimum engine performance & reduced emissions level. All engine vital parameter data shall be integrated with On Board Display(OBD) system of operator's cabin.

A suitable electronic tool (laptop) loaded with compatible software and all related accessories shall be provided equipment wise along with special tools for retrieval and analysis of the recorded critical parameters of self-diagnostic features, real time monitoring and equipment health-monitoring systems fitted with the equipment. The supplier shall also be required to provide readable reports downloaded from each Equipment.

Compatible Software loaded in electronic tool (Laptop) should be warranted for entire contract period or more.

4.4 Hydraulic Drive System:

The excavator hydraulic system should be of proven design for efficient operations. The main hydraulic pumps shall be variable displacement type, hydraulicmotors and cylinders should be field proven large heavy duty type and have suitable in-built protection from surge, cavitation, loss of oil due to hose leakage or burst, etc. As far as practicable reputable single make pumps, motors, cylinders and valves, etc. shall be used in the machine.

Adequate filtration of hydraulic oil shall be provided. The hydraulic tank shall be pressurized. An adequate and effective hydraulic oil cooling system shall also be provided.A transfer pump along with filtration unit shall be provided for filling of hydraulic oil in the tank.

Heat resistant / heat retardant hoses shall be fitted in heat zones. All hoses shall be grouped as far as possible and suitably clipped to reduce damage from scuffing and external damage

Hydraulic cylinder movement limiting provision / stopper and a boom lowering control system which complies with ISO 8643 shall be provided.

4.5 Swing System:

An independent hydraulic system should be provided for the swing motion.

Heavy duty Swing Circle with internal swing gear and pinion immersed in lubricant bath & dirt seals shall be provided. Swing Motor Brake should be provided.

An upper structure swing lock/suitable arrangement to lock the upper structure shall be provided.

4.6 Propel and Steering:

Independent crawler drive with independent fail-safe braking system and hydraulically operated emergency and parking brakes which comply with ISO 10265 shall be provided.

4.7 Undercarriage:

The undercarriage shall be heavy duty and of sufficient strength to withstand the high loads which may occur due to uneven ground conditions. It shall be of welded construction and stress relieved as required.

The sprocket should be a single piece / segmented type. Lifetime lubricated, idler and rollers, and a reliable track tensioning arrangement should be provided.

Crawler shoes shall be heavy duty and designed for ease of replacement whenever necessary.

4.8 Machinery House:

The excavator shall be provided with a machinery house made of steel sheeting supported by a steel structure and shall cover the engine & drive system. It shall be designed to give ready and safe access to personnel & equipment for maintenance.

Non-slip type walkways and catwalks with handrails shall be provided in and around the machinery house, the operator's cab and service platforms and shall comply with ISO 2867.

4.9 Lubrication System:

A centralized PLC based electrically operated, double / single line (as per manufacturer system design) automatic lubrication system shall be provided to service all lubrication points on the machine including high viscosity lubrication points.

The lubrication system shall be fully monitored to ensure adequate lubricant flow is maintained to all points. The monitoring system shall, wherever possible, be interlocked with the relevant control circuits to prevent damage due to lack of lubrication at any point. Alarms and indications for failure of lubrication system shall be provided andshall be repeated on the instrument/ test panel.

Lubricant containers of adequate size shall be located in a separate room / enclosure inside the machinery house / convenient location and be large enough to cater lubrication needs for continuous operation between refills. Sufficient numbers of suitable capacity lubricating pumps shall be provided. The containers shall be fitted with suitable arrangement for cleaning and refilling or replacement with fresh new barrels.

All lubrication lines and injectors shall be protected from damage. Location of all injectors shall be such that these can be conveniently inspected and repaired. The lubrication lines to the boom point should be properly guided. Flexible lines shall only be used where there is relative movement between parts and for final connection to movable components. Steel piping shall be used for long runs and shall terminate in steel junction blocks to prevent disturbance to steel piping when flexible hoses are replaced.

Lubricants recommended shall be of reputed make with Indian equivalent.

4.10 Operator's Cab:

A fully insulated, high-visibility, rigidly mounted, sound-suppressed, vibration-suppressed, FOPS operator's cab with standard air conditioning system containing environmentally safe refrigerant, tinted safety glass should be so positioned to facilitate a clear and unrestricted view of the travel & work areas of the machine necessary for its intended use. The performance criteria shall be in accordance with ISO 5006. The sound level inside the cab shall be below 80dBA while the equipment is operating, and with the door closed.

All operating controls, all monitoring, working signals should be conveniently located in consoles within easy reach of the operator and shall comply with ISO: 6405-1, ISO: 6405-2, ISO: 6682 & ISO: 10968. The operator's cab shall be provided with an emergency exit gate in addition to primary access path to the cabin.

The operator's seat shall be ergonomically designed suspension type, which can be adjusted for operator's height and weight. The seat shall provide vertical and fore / aft adjustment to allow custom fitting of the joysticks to individual operators for ease of operation. Seatbelt for operator with reminder shall be provided. The console shall have features an expandable media mounting post to which the Graphic User Interface (GUI) is mounted. The GUI shall have menus and information screens that allow the operator to display necessary basic information and perform various operation functions. Side / rear vision cameras shall be provided in the machine with remote display in operator's cab. The camera system shall also cover all the blind spots.

The air conditioner shall be heavy duty off-the-road equipment application type. The climate control ducting in the cab shall be located above and/ or below the operator. There should be controls to allow regulation of air flow and auto - defrosting arrangement. A cooling fan and a blower type heater shall also be provided.

Horn / Alarm shall be provided on outer sides of revolving frame, which shall be operated from operator's cab.

There should be a two-way communication systemother than mobile between operator's cab and the machinery house.

4.11 Gauges and Indicators/Electronic Display:

The following shall be provided:

a) Water temperature gauge
b) Engine oil pressure gauge/indicator
c) Fuel capacity gauge

d) Engine tachometer
e) Engine hour-meter
f) Low engine lube oil pressure indicator

4.12 Warning Alarms:

Warning alarm shall be provided for the following:

a. Engine oil level
b. Radiator coolant level
c. Hydraulic oil level
d. Air cleaner element
e. Engine oil pressure
f. Engine water temperature
g. Hydraulic oil temperature
h. Fuel level
i. Microcomputer (if applicable)
j. Automatic lubrication
k. P.T.O lubrication

4.13 Electrical Equipment:

The excavator shall be provided with the following:

a. 24V DC electrical system with suitably rated alternator of reputable make
b. Reputed make Electric start motor
c. Reputable make high capacity maintenance free batteries
d. Battery isolation switch / relay.

All electrical circuits shall be protected by adequately rated fuses/MCBs, which shall be easily accessible for maintenance.

4.14 Lighting:

Adequate LED flood lighting and illumination at strategic points both outside and inside of the machine shall be provided for visual observation and night shift operation.

4.15 Guards and Shields:

Adequate guards and shields which comply with ISO 3457 shall be provided throughout the excavator.

4.16 Automatic Fire Detection & Suppression System:

A suitable automatic fire detection and suppression system of reputed manufacturer (indigenous or imported), shall be provided on the equipment complying DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.

- Automatic fire detection and suppression system suitable for fire class A, B & C inside machinery house & below Deck of shovel.
- Bidder requires submitting a schematic drawing indicating Plan of the system with relative position of items to be protected from fire.

- Fire detection and suppression of fire may be either total liquid flooding or dry chemical powder base spray through nozzle strategically through an actuation cartridge, located to the targets, or combination of the two.
- Fire suppression agent used in neighborhood of electrical appliances shall be clean and shall not damage electrical / electronic component.
- Fire suppression system shall be non-hazardous & safe for human and environment friendly. It should have quick cleanup and environmental sustainability.
- The sensor shall send the signal to the control unit integrated with a LED and/or alarm indicator to show the status of the detector.
- The system shall operate only in active fire zone and suitably designed to extinguish the fire as per class of fire (A, B & C) of that location.
- The system shall be actuated automatically by detection of fire and control unit to be installed within the Operator's cabin for automatic system operation.
- The system shall also have provision of actuating manually.
- The system shall provide facility for self-checking /testing/inspection without operating.
- The data regarding health & event shall be logged in the system with date & time, which can be downloaded to PC/ Laptop in latter stage with memory capacity to store data of at least 15days.
- The system should be capable for efficient operation in the extreme mining conditions with dust, dirt, water & vibrations.

The high pressure storage vessels and hoses, if used with fire- fighting and fire suppression systems, shall conform to the requirements stipulated in the relevant Indian standards.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for AFDSS including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013.Periodical refilling is to be done by the supplier.

4.17 Fire Extinguishers:

An adequate number of fire extinguishers shall be provided at strategic points on the shovel, suitably mounted in heavy-duty brackets for ease of removal.

The extinguishers shall be both dry chemical powder (DCP type) and CO_2 type with a minimum capacity of 5 kg and shall comply with Indian Standard IS: 15683 with latest amendment.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for Fire Extinguishers, includingMaterials and Chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS Circular No. DGMS (Approval) Circular No. 02 dated 08th July 2013. . Periodical refilling is to be done by the supplier.

4.18 Safety Features

All safety features & devices as per Govt. Of India Gazette notification no. Z 20045/01/2018/S&T (HQ) dated 01.10.2018, DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020 and subsequent amendments, if any, including following shall be provided in the equipment. Bidder shall submit a Certificate as an undertaking in this regard that all safety features and devices are incorporated in the equipment.

a. All function cut off switch.
b. Thermal insulation blanket on exhaust side of Engine
c. Hydraulic oil and air filter clogging indicators.
d. Swing Motor Brake.
e. Fire resistant / fire retarder hydraulic hoses in place of ordinary hoses to reduce the chances of fire. All the sleeves and conduits in which cable/wire are laid shall be of fire resistant type.
f. Turbocharger guard.
g. Two-point Seat Belt with reminder.
h. Vent valve, if applicable on top of hydraulic tank should be able to be removed without any tool.
i. A baffle plate between cold zone and hot zone
j. Provision for limiting of hydraulic cylinder-Stoppers

5. Ancillary Equipment and Other Requirements:

The following are to be provided with the excavator:

a. Hydraulic jack 100 T – 2 nos.
b. Hydraulic pressure gauges with adopters, sockets suitable for checking Hyd. Pressure in the equipment
c. One set Pneumatic Tool of one-inch drive of reputed make
d. Multi meter for measuring electrical & electronic circuit values provided in the equipment.

6. Productivity & Health monitoring system:

The equipment shall be provided with suitable licensed, on-line, real time, monitoring interface facility, compatible for GPS-based transfer of equipment performance data (commonly known as PMS and HMS) to third party equipment management system.

The system shall have measuring points and self data capturing facility for followings -

i) Working hour, idle hour, based on the duration of a shift for which the equipment is switched on for operation.
ii) Cumulative qty. of material handled (both in terms of Cu. M. & No. of buckets)
iii) Average cycle time for each day
iv) Average swing angle per day
v) Engine oil pressure & temperature

vi) Engine RPM
vii) Coolant level, Coolant flow & Coolant temperature
viii) Fuel level
ix) Hydraulic oil pressure , temperature, viscosity and water content
x) Hydraulic oil level indication
xi) Battery Voltage
xii) Alternator output
xiii) Fault codes along with details
xiv) Preventive maintenance parameters
xv) Predictive health monitoring parameters.
xvi) Additional parameters as per requirement of equipment manufacturer / user

This system shall have suitable memory capacity to store all captured vital parameter data in 6 hours or less interval batch form and all real time exception / error data for at least 30 days period and shall have suitable port to download these data to a laptop / data storage system.

The supplier shall provide the following:

1. There has to be one integrated single online port for capturing all the vital data.
2. The real time interface telemetry port will be provided in the equipment
3. All the data shall be available in the individual form through single port and its communication protocol must be as per global standards.
4. There shall be no additional requirement of any data converter for data capturing like Analog to Digital and vice-versa etc.
5. There shall be integrated on board data management system as explained at point no.3 as above.
6. Permission to third party for interfacing, data collection through online port.
7. Signing of Non-disclosure agreement to protect intellectual property right on either side.
8. To provide full technical support to third party vendor for interpretation and defining parameters for individual alarm to monitor equipment vital data.
9. The HEMM equipment supplier should provide access to data as required by end user without any financial implication to third party.

This interface facility shall be made available till the working life of equipment.
However, the supplier shall provide this interface facility during the contract period as a part of contract cost.

To ensure the satisfactory operation of above system, a tripartite agreement shall be signed by the user, supplier and the service provider of OITDS / System Integrator.

7. Performance Guarantee

In accordance with the provisions of clause C 6.2.6 of the technical specifications the expected working hours per annum are 5000 (five thousand) hours. The expected working hours per annum as indicated are only approximate hours and may vary +/- 500 hours.

The expected average working hours per annum as indicated are only approximate hours and may vary $\pm$ 500 hours. Total duration of contract will be 120 months irrespective of working

hour. . In case, actual working hour exceeds 55,000 (5,500x10) hrs during the tenure of 10 years contract period, then consumable items (as declared by the bidder in the offer) will be arranged by the purchaser.

In accordance with the provisions of clauses C 7.2.2 and C 7.3.2 of the technical specifications the supplier shall guarantee that the availability of each equipment shall be not less than 85% (eighty-five percent) annually for a period of 1st to 5th year of operation and 84% (eighty-four percent) annually for a period of 6th to 10th year of operation from the accepted date of commissioning.

8. Expected life of major assemblies

Manufacturer shall give expected life of major assemblies also in the Format given in Table below, duly signed.

Table

EQUIPMENT	MAJOR ASSEMBLIES (whichever is applicable)	EXPECTED LIFE* (in Hours)
Hydraulic Shovels	Prime Mover (Diesel)	
	Under carriage	
	Hydraulic pump	
	Hydraulic motor	
	Hydraulic Cylinders	
	Hydraulic control valve	
	Boom & Sticks	
	Bucket (Dipper)	
	Other Electrical items	

Note - * Expected life means life before first overhaul

9. Information to Be Provided By The Supplier:

The Supplier shall furnish the following information. All technical information shall be in SI units.

9.1 General:

a. Number of similar model supplied during the last ten years.
The information shall be given in the following format and in the order of most recent first:

Company Name	Mine Name	Mine Location	Mine type	Sl No. of Machines	Model & Capacity	Commissioned date (DD/MM/YYYY)

The information in the above format should be self certified.

b. Details of special tools to be provided with the equipmentfor maintenance, erection & commissioning of the equipment. The firm shall give an undertaking that the listed tools shall be sufficient for the purpose and if any additional tool is required, that shall be provided as per requirement
c. Details of erection programmes for the bid.

9.2 Technical Details:

a) Volumetric rating of the bucket according to ISO 7451 together with verification calculations and drawings (refer clause 4.1).
b) Maximum bucket and arm cylinder digging forces measured according to ISO 6015.
c) Schematic Drawing of the machine showing the position of the Center of Gravity and it's distance from the Central Axis of Rotation under the following operating conditions:

   i. Bucket at maximum digging force position with crawler tracks perpendicular to the face of the cut.
   ii. Bucket at maximum digging force position with crawler tracks parallel to the face of the cut.

d) Engine performance curves of net power, net torque and specific fuel consumption measured according to ISO 9249 along with test bed data.
e) Calculation for determining the time for operating cycle.

   i. Load the bucket to rated capacity over the maximum working range, swing through an angle of 90 degree, dump and return to dig.
   ii. Hourly fuel consumption for the above operating cycle.

f) Detailed technical descriptions of each system of the Excavator.
g) Layout drawings and detailed description of all hydraulic systems and components.
h) Comprehensive commercial literature indicating therein complete technical specifications, the content of which must comply with ISO 7135.
i) Schematic and layout drawings, details of the supplier, number, function and type of Automatic Centralized Lubrication System.
j) Schematic and layout drawings and details of the Supplier, number, function and type of Automatic fire detection and suppression System.
k) Details of major bought-out assemblies and sub-assemblies indicating make, type, manufacturer's complete address etc.
l) Operation and Maintenance Manuals in accordance with ISO 6750, with copies in CDs as stipulated in clause A.3

9.3 Dimensions, Weights and Performance Details:

9.3.1 Working Ranges:

a. Maximum digging height (m)
b. Maximum digging reach (m)
c. Maximum digging depth (m)
d. Minimum dumping height (m)
e. Reach at maximum digging force (m)

9.3.2 Dimensions

9.3.2.1 Basic machine

a) Upper structure overall width (m)
b) Upper structure overall width, with catwalks (m)
c) Upper structure rear end swing radius (m)
d) Height to top of FOPS (m)
e) Clearance under upper structure (m)
f) Undercarriage overall width (m)
g) Crawler overall length (m)
h) Crawler tracks height (m)

9.3.2.2 Front End Attachment:

b) Bucket width (m)
c) Boom length with specified bucket (m)
d) Arm length with specified bucket (m)

9.3.3 Weights:

a) Shipping weight of all separate components (kg)
b) Bucket total weight (kg)
c) Bucket specific weight (kg/cum)
d) Weight of undercarriage (kg)
e) Total working/operating weight (kg)

9.3.4 Performance details:

a) Swing speed (r / min)
b) Travel speed (m/sec)
c) Gradeability(%)

9.3.4 Engine:

a) Manufacturer and model
b) Number of cylinders
c) Bore (mm)
d) Stroke (mm)
e) Displacement (litre)
f) ISO net power at.....r/min
g) Maximum torque at ……..r/min (Nm)

9.3.6 Hydraulic system:

a. Make, Model, number, flow rates and operating pressures of pumps
b. Make, Model, number and ratings of motors
c. Make, Model, number, piston diameters and stroke lengths of cylinders

d. Relief valve operating pressures (kPa)

9.3.7 Undercarriage:

a. Crawler width (m)
b. Crawler shoes width and total number
c. Centre to centre of idler roller and sprocket (m)
d. Ground contact area (sq.m)
e. Ground bearing pressure (kPa)
f. Load rollers, diameter and number per crawler
g. Driving sprocket diameter (m)
h. Idler roller diameter (m)

9.3.8 Electrical System:

a. Starter make and model
b. Starter control make and model
c. Alternator make and model
d. Batteries, numbers and rating
e. Lighting details

Equipment Acceptance:

The Equipment ordered will be finally accepted subject to the Supplier demonstrating to the Purchaser or its authorised representative (may be third party) that the equipment, or assembly or sub-assembly (selected at random by the Purchaser) when tested, meets the Performance Data provided by the Supplier in accordance with the requirements of clause 9. In case if testing facility for a particular parameter is not available at site, the Equipment ordered will finally be accepted subject to submission of Manufacturer's certified test copy for that parameter of performance data provided by the supplier in accordance with the requirements of clause 9. A detrimental deviation of up to 2½% will be accepted.

1	Cycle Time at 90 deg swing	To be tested at site after commissioning, under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
2	Hourly Fuel Consumption	To be tested at site after on 30 (thirty) operating days' average immediately after commissioning under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
3	Digging Forces	Manufacturer's test certificate to be furnished
4.	Engine Net Power & RPM	To be tested at Works / site as per ISO 9249. *(*Equipment manufacturer's Test data/report should be submitted.*)*

PART D: EQUIPMENT SPECIFICATIONS

Equipment Specification of 20CuM Electric Hydraulic Face shovel

[Bucket Capacity Range: - 20CuM – 23CuM]

1. Scope of Specification

This specification is intended to cover the technical requirements for the design, manufacture, testing, delivery, on-site erection and commissioning of a self-propelled, crawler mounted electrically powered hydraulic face excavator with bucket capacity range 20**CuM- 23CuM**.

2. References

The following International Standards are referred to in, and form part of, the Specification. The superseded or equivalent standards, if any, to any of the following ISO standards if offered are to be supported by documentary evidence in form of copies of the equivalent standards certifying that offered standards are identical to the corresponding ISO standards of NIT.

ISO 2867	Earth-moving machinery - Access systems
ISO 3457	Earth-moving machinery - Guards and shields - Definitions and specifications
ISO 6014	Earth-moving machinery - Determination of ground speed
ISO 6015	Earth-moving machinery - Hydraulic excavators - Methods of measuring tool forces
ISO 6405-1	Earth-moving machinery - Symbols for operator controls and other displays - Part 1: Common symbols
ISO 6405-2	Earth-moving machinery - Symbols for operator controls and other displays - Part 2: Specific symbols for machines, equipment and accessories
ISO 6682	Earth-moving machinery – Zones of comfort and reach for controls
ISO 6750-1	Earth-moving machinery – Operator's Manual-Part I: Contents and Formats
ISO 6750-2	Earth-moving machinery- Operation and Maintenance-Operator's Manual-Part2: List of references.
ISO 7135	Earth-moving machinery - Hydraulic excavators - Terminology and commercial specifications
ISO 7546	Earth-moving machinery – Volumetric ratings for hydraulic excavator buckets and bottom discharge buckets.
ISO 8643	Earth-moving machinery - Hydraulic excavator and back-hoe loader boom lowering control device - Requirements and tests
ISO 10265	Earth-moving machinery – Crawler machines – Performance requirements and test procedures for braking systems
ISO 10968	Earth-moving machinery – Operator' controls
ISO 20474-1	Earth –moving machinery-safety- Part1: General requirement
ISO 20474-12	Earth –moving machinery-safety- Part 12: Requirement for cable excavators

Other ISO standards - indicated in the specifications of individual system of the equipment.

3. Design Criteria

The excavator shall be capable of continuous digging for protracted periods on a system of 3 shifts each of 8 hours duration per day throughout the year in hard, highly abrasive, blasted sandstone/rock having average density after blasting of 1,800 kg/m^3.

The excavator shall be suitable for 2:1 heaped loading of Rear Dumpers of 200 T payload class capacities.

3.1 Face Shovel Attachments

The excavator with Face Shovel attachment shall have the following working ranges:

a. Maximum cutting height not less than 14.00M
b. Maximum digging reach not less than 14.00M
c. Maximum digging depth not less than 2.80 M
d. Maximum dumping height not less than10.80M
e. Operating weight of the machine not less than 350 T

The bucket digging force measured in accordance with ISO 6015 should be not less than **25000**kg/m of bucket width.

4. Mechanical Specification:

4.1 Bucket:

The excavator shall be supplied with a hard faced, heavy-duty rock Face Shovel bucket capacity **of range from 20CuM upto23CuM** rated according to ISO 7546 / IS 12206. The calculated bucket heap capacity should not be less than 20 CuM in any circumstances.

The specific weight of the steel used in construction of bucket shall be not less than 7800 kg/m3.

The tooth points and shanks (tooth adapters, if applicable) supplied with the bucket shall also be hard faced and should have proper, durable, easily removable and shock absorbing type attachment with the bucket.

4.2 Front End Equipment:

The boom and arm should be a rugged durable construction of high strength steel and free from any stress concentrations. The design must take care of all forces i.e. bending, torsion, compression, etc. encountered during operation of the equipment. Sealed bearings / bushings should be provided at pivot points.

The bucket attachment connecting pins shall be sealed and lubricated.

4.3 Hydraulic Drive System:

The excavator hydraulic system should be of proven design for efficient operations. The hydraulic pumps, motors, and cylinders should be field proven large heavy duty type and have suitable in-built protection from surge, cavitation, loss of oil due to hose leakage or burst, etc. As far as practicable, reputable single make pumps, motors, cylinders and valves, etc. shall be used in the machine.

Adequate filtration of hydraulic oil shall be provided. The hydraulic tank preferably be pressurized. An adequate and effective hydraulic oil cooling system shall also be provided.

All hoses shall be grouped as far as possible and suitably clipped to reduce damage from scuffing. Fire resistant / fire retarder hydraulic hoses in place of ordinary hoses to reduce the chances of fire. All the sleeves and conduits in which cable/wire are laid shall be of fire resistant type

A boom lowering control system which complies with ISO 8643 shall be provided.

4.4 Swing System:

An independent hydraulic system should be provided for the swing motion.
A suitable upper structure swing locking arrangement shall be provided for safety purpose.

4.5 Propel and Steering:

Independent crawler drive with independent fail-safe braking system and hydraulically operated emergency and parking brakes which comply with ISO 10265 shall be provided.

4.6 Undercarriage:

The undercarriage shall be heavy duty and of sufficient strength to withstand the high loads, which may occur due to uneven, ground conditions. It shall be of welded construction and stress relieved as required.

The sprocket should be a single piece / segmented type. Lifetime lubricated, idler and rollers, and a reliable track tensioning arrangement should be provided.

Crawler shoes shall be heavy duty and designed for ease of replacement whenever necessary.

The weight of the undercarriage should preferably be 30 to 45% of the operating weight of the machine.

4.7 Machinery House:

The excavator shall be provided with a machinery house made of steel sheeting supported by a steel structure and shall cover the Prime Mover & Drive System. It shall be designed to give ready and safe access to personnel & equipment for maintenance.

Non-slip type walkways and catwalks with handrails shall be provided in and around the machinery house, the operator's cab and service platforms and shall comply with ISO 2867.

4.8 Lubrication System:

A proven automatic centralized lubrication system hydraulic**/** pneumatic **/** air/ electric operated of positive pressure type, positive displacement lubrication measurement for multiple lubrication points, through injectors should be provided.

The lubrication system shall be fully monitored to ensure adequate lubricant flow is maintained to all points. The monitoring system shall, wherever possible, be interlocked with the relevant control circuits to prevent damage due to lack of lubrication at any point. Alarms and/ or

indications for the failure of lubrication system shall be repeated on the instrument/ test panel. Flow of grease and pressure of the lubrication system shall be fully monitored through pressure switches to ensure that adequate lubricant flow is maintained to all major parts.

Lubricant containers of adequate size shall be located in a separate room / enclosure inside the machinery house / convenient location. Sufficient numbers of suitable capacity lubricating pumps shall be provided. The containers shall be fitted with suitable arrangement for cleaning and refilling or replacement with fresh new barrels.

All lubrication lines and injectors shall be protected from damage. Location of all injectors shall be such that these can be conveniently inspected and repaired. The lubrication lines to the boom point should be properly guided. Flexible lines shall only be used where there is relative movement between parts and for final connection to movable components. Steel piping shall be used for long runs and shall terminate in steel junction blocks to prevent disturbance to steel piping when flexible hoses are replaced.

Lubricants recommended shall be of reputed make with Indian equivalent.

4.9 Operator's Cab:

A fully insulated, high-visibility, rigidly mounted, sound-suppressed, vibration-suppressed, air conditioned, operator's cab with tinted safety glass should be so positioned to facilitate a clear and unrestricted view of the travel & work areas of the machine necessary for its intended use. The performance criteria shall be in accordance with ISO 5006. The sound level inside the cab shall be below 80dBA while the equipment is operating, and with the door closed. All operating controls, all monitoring, working signals and emergency power isolation switch to trip the field switch should be conveniently located in consoles within easy reach of the operator and shall comply with ISO: 6405-1, ISO: 6405-2, ISO: 6682 & ISO: 10968. The operator's cab shall be provided with an emergency exit gate in addition to primary access path to the cabin.

The operator's seat shall be ergonomically designed suspension type, which can be adjusted for operator's height and weight. The seat shall provide vertical and fore / aft adjustment to allow custom fitting of the joysticks to individual operators for ease of operation. Seatbelt for operator with reminder shall be provided. The console shall have features an expandable media mounting post to which the Graphic User Interface (GUI) is mounted. The GUI shall have menus and information screens that allow the operator to display necessary basic information and perform various operation functions. Side / rear vision cameras shall be provided in the machine with remote display in operator's cab. The camera system shall also cover all the blind spots.

The air conditioner shall be heavy duty off-the-road equipment application type. The climate control ducting in the cab shall be located above and/ or below the operator. There should be controls to allow regulation of air flow and auto - defrosting arrangement. A cooling fan and a blower type heater shall also be provided.

Horn / Alarm shall be provided on outer side of revolving frame, which shall be operated from operator's cab.

There should be a two-way communication system between operator's cab and the machinery house.

4.10 Gauges and Indicators/Electronic Display:

The following shall be provided in Operator's Cabin:

a) Voltmeter
b) Ampere meter
c) Hour-meter
d) Hydraulic Oil Level Indicator
e) Hydraulic Oil Temperature Gauge
f) Motor Overload Indicator
g) Phase Failure Indicator
h) Phase sequence relay
i) Pilot Tripping
j) Motor's Power on/off

4.11 Warning Alarms:

Warning alarm shall be provided for the following in Operator's Cabin:

a) Hydraulic oil level
b) Hydraulic oil temperature
c) Microcomputer (if applicable)
d) Automatic lubrication
e) Trip Alarm for Main Motor
f) Hydraulic Oil Filter Clogging Indicator

4.12 Guards and Shields:

Adequate guards and shields which comply with ISO 3457 shall be provided throughout the excavator.

4.13 Automatic Fire Detection & Suppression System:

A suitable automatic fire detection and suppression system of reputed manufacturer (indigenous or imported), shall be provided on the equipment complying DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020.

- Automatic fire detection and suppression system suitable for fire class A, B & C inside machinery house & below Deck of shovel.
- Bidder requires submitting a schematic drawing indicating Plan of the system with relative position of items to be protected from fire.
- Fire detection and suppression of fire may be either total gas flooding or dry chemical powder base spray through nozzle strategically through an actuation cartridge, located to the targets, or combination of the two.
- Fire suppression agent used in neighborhood of electrical appliances shall be clean and shall not damage electrical / electronic component.
- Fire suppression system shall be non-hazardous & safe for human and environment friendly. It should have quick cleanup and environmental sustainability.

- The sensor shall send the signal to the control unit integrated with a LED and/or alarm indicator to show the status of the detector.
- The system shall operate only in active fire zone and suitably designed to extinguish the fire as per class of fire (A, B & C) of that location.
- The system shall be actuated automatically by detection of fire and control unit to be installed within the Operator's cabin for automatic system operation.
- The system shall also have provision of actuating manually.
- The system shall provide facility for self-checking /testing/inspection without operating.
- The data regarding health & event shall be logged in the system with date & time, which can be downloaded to PC/ Laptop in latter stage with memory capacity to store data of at least 15days.
- The system should be capable for efficient operation in the extreme mining conditions with dust, dirt, water & vibrations.

The high pressure storage vessels and hoses, if used with fire- fighting and fire suppression systems, shall conform to the requirements stipulated in the relevant Indian standards.

Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for AFDSS including materials and chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS (Approval) Circular No. 02 dated 08th July 2013.Periodical refilling is to be done by the supplier.

4.14 Fire Extinguishers:

An adequate number of fire extinguishers shall be provided at strategic points on the shovel, suitably mounted in heavy-duty brackets for ease of removal.

The extinguishers shall be both dry chemical powder (DCP type) and CO_2 type with a minimum capacity of 5 kg and shall comply with Indian Standard IS: 15683 with latest amendment.
Bidder shall submit a Certificate as an undertaking that, a valid Test Certificate (valid as on the date of commissioning of the equipment at site) shall be submitted at the time of supply of equipment along with other documents, for Fire Extinguishers including Materials and Chemicals used in fire suppression system from any Government or Government approved Laboratory in compliance with relevant Indian Standards as per DGMS Circular No. DGMS (Approval) Circular No. 02 dated 08th July 2013. Periodical refilling is to be done by the supplier.

5. Electrical Specification

5.1 Power Supply

The electrical power supply to the machine will be 6.6 kV (± 10%), 50 Hz (±3%), 3 phases (earthed neutral). This will be provided via a trailing cable from the mine electrical distribution network.

All high-tension electrical equipment shall have suitable insulation rating not less than 12 kV

to protect against a rise in potential across any one phase of the supply.

An isolator switch shall be provided in the machine for disconnecting the main incoming supply line.

A high voltage distribution switchboard shall be provided to supply the various machine drive, control and auxiliary sub-circuits. Each switch forming part of the switchboard shall comprise an on-load isolator; an electrically closed and tripped, vacuum circuit breaker / vacuum contactor and fitted with protection against overload, short circuit and earth fault; and appropriate control push buttons, indicators and alarms. Indication of the state of the switch and any fault condition shall be provided on the front of the switch panel.

5.2 Prime Mover

The hydraulic power system shall be driven by AC motor of suitable rating (1200KW - 1400KW). The motor shall be suitable for outdoor operation, self-cooled, continuous rated and dust proof with suitable ingress protection (IP) for the intended use. The Insulation class should be Class-F or above with Class-B temperature rise.

The electrical drive systems must be so designed that all the functions of the equipment have optimum output with high mechanical efficiency, low maintenance cost and improved maintainability and component life.

The electric motor shall be controlled from a suitably rated vacuum starter control panel providing overload, short circuit, single phase, earth fault, earth leakage and over &under voltage protection. Fault and circuit status indications shall be provided on the starter control panel.

The motor shall be capable of being remotely started from a control/instrument panel located in the machinery house / operators cab. A remote stop facility shall be provided in the operator's cab.

The control circuits for each drive shall be housed in a steel cabinet provided with internal illumination. The cabinets shall be dust and vermin proof.

Anti-condensation heaters shall be fitted to all major drives and electrical cabinets wherever applicable.

All control circuits shall operate at 24V DC or 110/ 220 V AC, single-phase 50Hz. with earthed neutral. The electrical supply for other items shall be 24V DC or 440 / 415V, 3 phase, 50Hz or 220 / 110Volts, 50Hz, single phase with earthed neutral as appropriate.

Control circuit transformers shall be protected on their primary side by isolation switches and fuses. Control circuits shall be protected on one side of the transformer by a fuse with the opposite side connected to earth.

All cables used in the machine shall be of the fire resistant type.

5.3 Trailing Cable

The shovel shall be provided with 300 meters of 6.6 kV, 6 core trailing cable of adequate cross section in relation to the rating of machine and the 50 degree C ambient temperature and supply should be as per Indian Electricity rule clause 123, sub-clause 1 & 6. The cable shall be of the flexible type suitable for use with open pit mining machinery.

The cable shall have 3 power cores of equal adequate cross section individually screened with metallic ATC (Annealed tinned copper) wire or specially designed formulated semi-conducting compound, 2 earth cores of equal cross section of minimum size of 50% of size of power core and one pilot core. The cable should have minimum insulation level of 12 kV.

The shovel shall be provided with a weatherproof box termination for trailing cable.

5.4 Power Factor Correction and Harmonic Suppression:

The electrical circuit shall include suitable arrangements for power factor correction to ensure that the average power factor over the whole cycle is above 0.9 lag.
The electrical circuits shall have adequately designed harmonics suppression networks or control schemes for reducing harmonics and transients to acceptable levels as per IEEE Standard 519.

5.5 Field Switch

The shovel should be provided with a skid-mounted field switch. The switch shall be of robust construction suitable for the rugged terrain and the mining conditions for which it will be used. It shall also be dust and vermin proof and protected to withstand torrential monsoon rains. Proper illumination shall be provided within the enclosure.

The switchgear should be of vacuum circuit breaker type with symmetrical rupturing capacity of 150MVA at 6.6 kV. The field switch shall also have earth fault, overload, short circuit, over voltage, under voltage, single phase, earth leakage and reverse phase sequence protection relays. In an emergency, it should be possible to trip the field switch from operator's cabin by a push button switch and through inbuilt remote sensor. Provision to trip VCB mechanically and electrically shall also be provided.

Suitable arrangement shall be provided to suppress the damaging over voltage due to switching transients and lighting peaks.

Suitable facilities shall be provided for the termination of supply cables by plug & socket type cable coupler arrangement. Earth connection stud shall be provided on each terminal box and on the main body of the switch casing. It shall be possible to feed through the switch to other similar units. Blank plates and adapters shall be provided to safely seal the feed- through termination against the elements when not in use.

The HV junction Box shall be interlocked with tripping circuit of field switch and HT Isolator panel shall be mounted / placed in such a way that it should be easily accessible for the purpose of maintenance, repair and operation in compliance with Indian Electricity Rules and DGMS circulars.

5.6 Lighting

Adequate flood lighting and illumination at strategic points both outside and inside of the shovel shall be provided for visual observation and night shift operation. The lighting fixtures

shall be supplied at 220/110 V fed from main / auxiliary transformer (star point grounded) or 24V D.C. Earth leakage protection is to be provided with lighting circuit breaker.

5.7 Transformers

All transformers shall be of reputed manufacturer, suitably rated for the duty specified and the operating environment. The transformers shall be delta-star connected with star points earthed for earth fault protection.

5.8 Safety Features

All safety features & devices as per Govt. Of India Gazette notification no. Z 20045/01/2018/S&T (HQ) dated 01.10.2018, DGMS (Tech) Circular No. 06 of 2020 dated 27.02.2020 and any subsequent amendments, if any, including following shall be provided in the equipment.

a. All function cut off switch.
b. Swing Motor Brake.
c. Fire resistant / fire retarder hydraulic hoses in place of ordinary hoses to reduce the chances of fire. All the sleeves and conduits in which cable/wire are laid shall be of fire resistant type.
d. Seat Belt with seat belt reminder.
e. Vent valve, if applicable on top of hydraulic tank should be able to be removed without any tool.
f. A baffle plate between cold zone and hot zone (if applicable)
g. Provision for limiting of hydraulic cylinder.

6. Ancillary Equipment and Other Requirements:

The following are to be provided with the excavator:

a. Horn
b. Hydraulic jack 100 T – 2 nos.
c. Hydraulic pressure gauge
d. One set Pneumatic Tool of oneinch drive of reputed make.
e. Adequate 440V/415V (+/- 10%) three phases 50 Hz (+/- 3%) welding power outlet suitably located so that welding can be carried out any point on the excavator.
f. Adequate 24V DC or 220V/110V single phase, hand held inspection outlets, portable hand lamps and all necessary supporting equipment.
g. A 220V/110V single phase, portable electric blower with suction attachment of reputed make.
h. The machine should be equipped with Data Logging Units for capture of key performance parameters of prime mover, hydraulic system and lubrication system for better reliability
i. The equipment should be supplied along with first fill of all Oils, Grease and Lubricants required for successful commissioning of the equipment.

7. Productivity & Health monitoring system:

The equipment shall be provided with suitable licensed, on-line, real time, monitoring interface facility, compatible for GPS-based transfer of equipment performance data (commonly known as PMS and HMS) to third party equipment management system.

The system shall have measuring points and self data capturing facility for followings -

i) Working hour, idle hour, based on the duration of a shift for which the equipment is switched on for operation.
ii) Cumulative qty. of material handled (both in terms of Cu. M. & No. of buckets)
iii) Average cycle time for each day
iv) Average swing angle per day
v) Incoming voltage, current, power consumption, frequency and power factor.
vi) All drive circuit loop vital parameters
vii) Transmission / gear box vital parameters
viii) Air / hydraulic system vital parameters
ix) All drive motors / transformer vital parameters
x) Preventive maintenance parameters
xi) Predictive health monitoring parameters.
xii) Additional parameters as per requirement of equipment manufacturer / user

This system shall have suitable memory capacity to store all captured vital parameter data in 6 hours or less interval batch form and all real time exception / error data for at least 30 days period and shall have suitable port to download these data to a laptop / data storage system.

The supplier shall provide the following:

1. There has to be one integrated single online port for capturing all the vital data.
2. The real time interface telemetry port will be provided in the equipment.
3. All the data shall be available in the individual form through single port and its communication protocol must be as per global standards.
4. There shall be no additional requirement of any data converter for data capturing like Analog to Digital and vice-versa etc.
5. There shall be integrated on board data management system as explained at point no.3 as above.
6. Permission to third party for interfacing, data collection through online port.
7. Signing of Non-disclosure agreement to protect intellectual property right on either side.
8. To provide full technical support to third party vendor for interpretation and defining parameters for individual alarm to monitor equipment vital data.
9. The HEMM equipment supplier should provide access to data as required by end user without any financial implication to third party.

This interface facility shall be made available till the working life of equipment.
However, the supplier shall provide this interface facility during the contract period as a part of contract cost.

To ensure the satisfactory operation of above system, a tripartite agreement shall be signed by the user, supplier and the service provider of OITDS / System Integrator.

8. Performance Guarantee

In accordance with the provisions of clause C 6.2.6 of the technical specifications the expected working hours per annum are 5000 (five thousand) hours. The expected working hours per annum as indicated are only approximate hours and may vary +/- 500 hours. The expected average working hours per annum as indicated are only approximate hours and may vary ± 500 hours. Total duration of contract will be 180 months irrespective of working hour. In case, actual working hour exceeds 82,500 (5500x15) hrs during the tenure of 15 years contract period, then consumable items (as declared by the bidder in the offer) will be arranged by the purchaser.

In accordance with the provisions of clauses C 7.2.2 and C 7.3.2 of the technical specifications the supplier shall guarantee that the availability of each equipment shall be not less than 85% (eighty-five percent) annually for a period of 1st to 5th year of operation, 84% (eighty-four percent) annually for a period of 6th to 10th year of operation and 83% (eighty-three percent) annually for a period of 11th to 15th year of operation from the accepted date of commissioning.

9. Expected life of major assemblies

Manufacturer shall give expected life of major assemblies also in the Format given in Table below, duly signed.

Table

EQUIPMENT	**MAJOR ASSEMBLIES**	**EXPECTED LIFE* (in Hours)**
Hydraulic Shovel	Prime Mover (Elect.)	
	Under carriage	
	Hydraulic pump	
	Hydraulic motor	
	Hydraulic Cylinders	
	Hydraulic control valve	
	Boom & Sticks	
	Bucket (Dipper)	
	Other Electrical items	

Note - * Expected life means life before first overhaul

10. Information To Be Provided By The Supplier:

The Supplier shall furnish the following information. All technical information shall be in SI units.

10.1 General:

a. Number of similar model supplied during the last ten years.

The information shall be given in the following format and in the order of most recent first.

Company Name	Mine Name	Mine Location	Mine type	Sl No. of Machines	Model & Capacity	Commissioned date (DD/MM/YYYY)

The information in the above format should be self-certified.

b. Detail list of special tools, which shall be provided with the equipment for maintenance, erection & commissioning of the equipment. The firm shall give an undertaking that the listed tools shall be sufficient for the purpose. If any additional tool is required, that shall be provided as per requirement.
c. Details of erection programmes for the bid.

10.2 Technical Details:

a. Volumetric rating of the bucket according to ISO 7546 together with verification calculations and drawings (refer clause 4.1)
b. Maximum bucket and arm cylinder digging forces measured according to ISO 6015
c. Schematic drawing of the machine showing the position of the Center of Gravity and it's distance from the Central Axis of Rotation under the following operating conditions:
    i. Bucket at maximum digging force position with crawler tracks perpendicular to the face of the cut.
    ii. Bucket at maximum digging force position with crawler tracks parallel to the face of the cut.
d. Details of electric drive control systems, including circuit diagrams, motor details and transformer specifications.]\
e. Calculation for determining the time for operating cycle.
    i. Load the bucket to rated capacity over the maximum working range, swing through an angle of 90 degree, dump and return to dig.
    ii. Hourly power consumption for the above operating cycle.
f. Detailed technical descriptions of each system of the Excavator.
g. Layout drawings and detailed description of all hydraulic systems and components.
h. Comprehensive commercial literature indicating therein complete technical specifications, the content of which must comply with ISO 7135.
i. Schematic and layout drawings, details of the supplier, number, function and type of Automatic Centralized Lubrication System.
j. Schematic and layout drawings and details of the Supplier, number, function and type of Automatic fire detection and suppression System.
k. Details of major bought-out assemblies and sub-assemblies indicating make, type, manufacturer's complete address etc.
l. Operation and Maintenance Manuals in accordance with ISO 6750, with copies in CDs as stipulated in clause A.3

10.3 Dimensions, Weights and Performance Details:

10.3.1 Working Ranges:

a. Maximum digging height (m)
b. Maximum digging reach (m)
c. Maximum digging depth (m)
d. Minimum dumping height (m)
e. Reach at maximum digging force (m)

10.3.2 Dimensions

10.3.2.1 Basic machine

a) Upper structure overall width (m)
b) Upper structure overall width, with catwalks (m)
c) Upper structure rear end swing radius (m)
d) Height to top of FOPS (m)
e) Clearance under upper structure (m)
f) Undercarriage overall width (m)
g) Crawler overall length (m)
h) Crawler tracks height (m)

10.3.2.2 Front End Attachment:

a) Bucket width (m)
b) Boom length with specified bucket (m)
c) Arm length with specified bucket (m)

10.3.3 Weights:

a) Shipping weight of all separate components (kg)
b) Bucket total weight (kg)
c) Bucket specific weight (kg/cum)
d) Weight of undercarriage (kg)
e) Total working/ operating weight (kg)

10.3.4 Performance details:

a) Swing speed (r / min)
b) Travel speed (m/sec)
c) Gradeability(%)

10.3.5 Hydraulic System:

a. Make, Model, number, flow rates and operating pressures of pumps
b. Make, Model, number and ratings of motors
c. Make, Model, number, piston diameters and stroke lengths of cylinders
d. Relief valve operating pressures (kPa)

10.3.6 Undercarriage:

a) Crawler width (m)
b) Crawler shoes width and total number
c) Centre to centre of idler roller and sprocket (m)
d) Ground contact area (sq.m)
e) Ground bearing pressure (kPa)
f) Load rollers, diameter and number per crawler
g) Driving sprocket diameter (m)
h) Idler roller diameter (m)

Equipment Acceptance

The Equipment ordered will be finally accepted subject to the Supplier demonstrating to the Purchaser or its authorised representative (may be third party) that the equipment, or assembly or sub-assembly (selected at random by the Purchaser) when tested, meets the Performance Data provided by the Supplier in accordance with the requirements of clause 10. In case if testing facility for a particular parameter is not availableat site, the Equipment ordered will finally be accepted subject to submission of Manufacturer's certified test copy for that parameter of performance data provided by the supplier in accordance with the requirements of clause 10. A detrimental deviation of up to 2½% will be accepted

1	Cycle Time at 90 deg swing	To be tested at site after commissioning, under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
2	Hourly Power Consumption	To be tested at site after on 30 (thirty) operating days' average immediately after commissioning under operating conditions as stated in the Tender. The equipment may be operated, at the Supplier's discretion, either by the Supplier's personnel (who are to be deployed for training as per contract) or by the Purchaser's personnel who are to be authorised by the Supplier.
3	Digging Forces	Manufacturer's test certificate to be furnished

Section VII - Sample Forms

Annexure-1

Letter of Bid

To
Coal India Limited,
Coal Bhawan
Premises No. 4,
Action Area IA,
New Town, Rajarhat,
Kolkata-700 156,
India

Dear Sirs,

Sub: Tender No. CIL/C2D/ Dated xx.xx.xxxx

1. Having examined the Tender Document including Addenda/Corrigenda, if any (insert numbers), we, M/s. (..… name of the bidder firm……..) represented by the undersigned, Mr/Ms…… Employee/ Partner /Legal Attorney / Proprietor /Accredited Representative, offer to supply and deliver (description of Goods and Services) vide our offer No……..dated ……in conformity with the said Tender Document.
2. We confirm to accept all terms and conditions contained in the tender document unconditionally.
3. We agree to abide by this bid for a period of 120 days from the date of bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
4. We confirm that until a formal contract is prepared and executed, this bid together with your written acceptance thereof and your Notification of Award, shall constitute a binding Contract between us. We also understand that the delivery shall reckon from the date of Notification of Award.
5. We understand that you are not bound to accept the lowest or any bid you may receive.
6. We confirm that the contents of the offer are given after fully understanding and all information furnished by us are correct and true and complete in every respect.
7. We confirm that all information/ documents / credentials submitted alongwith the tender are genuine, authentic, true and valid.
8. We confirm that if any information or document submitted is found to be false / incorrect forged/tampered in any way, the said offer shall be considered absolutely null & void and action as deemed fit may be taken against us including termination of the contract, forfeiture of all dues including EMD / Security Deposit and Banning of our firm along with all partners of the firm as per provisions of tender document/Purchase Manual of CIL/Provisions of law in force.
9. We have never been banned or delisted or debarred or Put on Holiday by any Government or Quasi-Government Agency or any Public Sector Undertaking in India.

OR

We were banned or de- listed or debarred or Put on Holiday by the organization named "----------" for a period of ---------- year(s) effective from ---------- to ----------for ---------- (the reasons to be mentioned).

Note: In case bidder is Indian Agent/ Indian subsidiary/Office of an Indian/foreign manufacturer, its Indian/foreign manufacturer shall also give above declaration in the Manufacturer's Authorisation form, Annexure-4 as per clause-9, SCC, Section-IV.

In case bidder is a manufacturer himself, then they should give above declaration for the Indian Agent/ Indian subsidiary/Office of an Indian/foreign manufacturer in the Manufacturer's Authorisation form, Annexure-4 as per clause-9, SCC, Section-IV.

10. **We** abide by the Code of Integrity for Public Procurement as defined in Clause 35, ITB and declare that there had been no transgression of this Code of Integrity with any entity in any country during last three years

OR

There had been previous transgression of this Code of Integrity for Public Procurement as defined in Clause 35, ITB during last three years with …… [name of entity (ies) and country(ies)].

11. **We** certify that there is no Conflict of Interest with any of the Bidders/Agents as defined in Clause 39, ITB.

12. We confirm that we have uploaded the Pre-Contract Integrity Pact, duly filled and signed and stamped, as per Annexure -…, Sample Forms, Section VII without any change in the format.

13. We confirm that we have quoted for the equipment along with the spares and consumables exactly as per the NIT requirement; otherwise our offer may be liable for rejection.

14. We confirm that the details of training charges have been indicated in the BoQ 2 folder as per Annexure -…, Sample Forms, Section VII.

15. We confirm that no agent / middlemen / liasoning agent or any entity in any name other than the disclosed authorised Indian agent is involved in the procurement of goods and services and subsequently, if at any stage, it is found by CIL that this confirmation is false, we shall be liable for penal action as per provisions of the NIT/Purchase Manual.

16. We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; We certify that we are not from such a country or, if from such a country, have been registered with the Competent Authority. We hereby also certify that we fulfil all requirements in this regard and are eligible to be considered. [evidence of valid registration by the Competent Authority is attached, if applicable."

17. "We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting / assignment to contractors from such countries; We certify that we are not from such a country or, if from such a country, have been registered with the Competent Authority and will not sub-contract/assign any work to a contractor from such countries unless such contractor is registered with the Competent Authority. We hereby also certify that we fulfil all requirements in this regard and are eligible to be considered. [evidence of valid registration by the Competent Authority is be attached, if applicable.].

Dated this_____ day of _____ 20--

Signature_____
Name _____
Designation_____
Seal _____

Duly Authorised to sign bid for and on behalf of _____

Note:

1. This letter should be on the letterhead of the Bidder and should be signed by a person competent and having the authority to bind the Bidder. The said document conferring authority upon the person should be submitted by the Bidder alongwith the LOB. If the said document conferring the authority is Article of Association of Company, Partnership Deed of a Registered Firm or any resolution of the company, then the notarized copy of the same should be uploaded. In other cases, the letter of authority should be a Power of Attorney sufficient to bind the bidder.

2. Power of Attorney should be on non-judicial stamp paper and sufficiently stamped as per the laws of India, if executed in India or if the authorisation is executed abroad, the same has to be got adjudicated under the Stamp Act at Kolkata.

3. In case the person who has signed LOB is not bidding himself and has authorized another person whose DSC is mapped in the name of bidder, to bid online on his behalf, then the further authorization on non-judicial stamp paper (as per [Annexure-2]) by the person signing the LOB in favour of person bidding online is required to be uploaded.

Annexure – 2

Format for Authorisation to DSC holder Bidding Online by the person who has signed Letter of Bid

(On NON JUDICIAL STAMP PAPER)

We do hereby authorise M/s. /Mr…… Address …….. whose DSC is mapped in the name of the bidder, for online bidding on behalf of us for Tender No. ……. dated …… invited by CIL on https://coalindiatenders.nic.in.

Name, Signature & Seal of the person who has signed Letter of Bid

And is Authorizing the DSC Holder for online bidding.

Name, Signature & Seal of the DSC Holder having DSC mapped in the name of the bidder, Authorised for online bidding

Signature & Seal of the PUBLIC NOTARY

Annexure – 3

Details of Bidder

Sl	Detail sought	To be filled by bidder
1	Offer No. & Date	
2	Name of the Bidder	
3	Registered office address of the Bidder	
4	Phone /fax/email id of registered office	
5	Name & Full Address of Manufacturer (If bidder is Indian Agent/India office/ Indian Subsidiary)	
6	Full Address of Factory of Manufacturer	
7	Phone /fax/email id of factory	
8	Name & designation of person signing LOB and Pre-Contract Integrity Pact	
9	Phone /Cell no/email id of person signing LOB and Pre-Contract Integrity Pact	
10	Nature of company (PSU/Private/Partnership/ others)	
11	Ownership details of the bidder's business entity (Proprietorship/ Partnership/ Joint Stock Co/Others)	
12	Name and address of the Owners/Board of directors	
13	IT Permanent Account Number (PAN) of Indian Entities	
14	GST No. of Indian Entities	

NOTE:-The bidder is required to furnish the details as above duly signed and stamped on their letterhead as part of its offer. If no information is applicable against any serial number, please mention – Not Applicable.

Annexure-4

Manufacturer's Authorization Form

(Please see Clause-5.1.(iii) & (iv) of Instructions to Bidders)

M/s. Coal India Limited,
Coal Bhawan
Premises No. 4,
Action Area IA,
New Town, Rajarhat,
Kolkata-700 156,
India

Dear Sir

Sub: Tender No. CIL/C2D/ R-xxxx Dated xx.xx.xxxx

1. We, [name of manufacturer] are established and reputable manufacturers of [name and/or description of goods] having factories at [address(es) of factory(ies)] and as a matter of our corporate policy do not quote directly (except in situations like supplies to OEM /OES/OPM, supplies of spares and consumables bundled with supply of equipment, supplies to customers not covered by dealer network due to geographical/ logistics constraints, as applicable) and hereby authorize our [Name & Address of Indian Agent/ Indian Office/ Indian Subsidiary] to submit a bid and sign the Contract with you on our behalf against the above Tender.

   Subsequently, if at any stage, it is found by CIL that we have quoted directly to any organisation in India excepting the situations mentioned above, we shall be liable for penal action as per provision of this NIT/ CIL Purchase Manual, if the justification provided by us is not considered adequate and satisfactory by CIL.

2. We hereby accept to extend our full support and commitment for all the terms and conditions including guarantee and warranty as per the General Conditions of Contract (GCC), Special Conditions of Contract (SCC), Technical Specifications for the Goods and Services offered for supply by the above bidder on our behalf against this tender for the entire contract period as well as ensure supply of spares & consumables even beyond contract period as stipulated in the relevant clauses of the tender document.

3. In the event of failure on the part of Indian Agent / Indian Office / Indian Subsidiary in fulfilment of contractual obligations or change in Indian agency or closure of Indian Office/ Indian Subsidiary for any unforeseen reason, we shall take the responsibility to make alternate arrangements to support CIL as well as execute the remaining period of the contract ourselves or through another competent Indian Agent/entity fulfilling the eligibility criteria stipulated in the tender document for Indian Agent/Indian Office / Indian Subsidiary.

4. We also confirm that we have never been banned or delisted by any Government or Quasi-Government Agency or any Public Sector Undertaking in India.

   OR

   We were banned by the organization named "----------" for a period of ---------- year(s) effective from ---------- to ----------for ---------- (the reasons to be mentioned).

   We also confirm that the Indian Agent/ Indian subsidiary/Office of an Indian/foreign

manufacturer i.e. M/s ……. (name) ,have never been banned or delisted by any Government or Quasi-Government Agency or any Public Sector Undertaking in India.

OR

5. The Indian Agent/ Indian subsidiary/Office of an Indian/foreign manufacturer i.e. M/s ……. (name) were banned by the organization named "----------" for a period of ---------- year(s) effective from ---------- to ----------for ---------- (the reasons to be mentioned).

   (Pl. strike out if not applicable)

6. We confirm that no agent / middlemen / liasoning agent or any entity in any name other than the disclosed authorised Indian agent is involved in the procurement of goods and services and subsequently, if at any stage, it is found by CIL that this confirmation is false, we shall be liable for penal action as per provisions of the NIT/Purchase Manual.

Dated this_____ day of _____ 20--

(Signature)
(Name)
(Designation)
(Seal)
Signed for and on behalf of [Name of manufacturers].

Notes:

1. This letter of authority should be on the letterhead of the Manufacturer and should be signed by a person competent and having the "Authority" to bind the Manufacturer. If the said document conferring the authority is Article of Association of Company, Partnership Deed of a Registered Firm or any resolution of the company, then the notarized copy of the same should be uploaded. In other cases, the letter of authority should be a Power of Attorney sufficient to bind the bidder.

2. Power of Attorney-should be sufficiently stamped as per the laws of India, if executed in India or if the authorization is executed abroad, the same has to be got adjudicated under the Stamp Act at Kolkata and the power to get it adjudicated should be mentioned in/conferred by the Manufacturer's Authorization Form and should be submitted by the Bidder alongwith its bid.

Annexure-4(a)

Principal Manufacturer's Declaration Form

(Please see Clause-5.1 (v), 6 (i) & 6 (ii) of Instructions to Bidders)

M/s. Coal India Limited,
Coal Bhawan
Premises No. 4, Action Area IA,
New Town, Rajarhat,
Kolkata-700 156, India

Dear Sir,

Sub: Supply of_____(Name Make and Model of Machine)_manufactured in India.
Ref: Tender No. ----------for supply of----------machine

We (Principal manufacturer) have decided to manufacture (Name and model of the machine or rage of machine) ……. in India. The manufacturing activity shall be taken up by M/s…….having Registered office at (Address) ……..in their manufacturing facility at(Address of factory)who have submitted their bid against this tender.

In this regard we certify the following:

1. That M/s------(Name of Bidder)-----is having sufficient infrastructure and vendor base in India in addition to direct support from us to undertake the manufacturing as per our design and specification, quality assurance and testing of the machine in their works in India.
2. That the equipment being quoted by M/s_____in this tender No._____shall be manufactured in India.
3. That the equipment along with spares and consumables to be supplied against this tender will have indigenous content of not less than 50%.
4. We have entered into a technical collaboration agreement/ license agreement with M/s (Name of bidder) for manufacturing of the above equipment (Collaboration Agreement/ license Agreement enclosed).

OR (Strike of whichever not applicable)

M/s (Bidder) is our Indian Subsidiary/Indian Manufacturing Entity and we have sufficient Managerial control over the (Bidder)_with respect to the manufacturing, testing & quality control and supply with respect to the quoted machine.(Copy of valid Legal Document/ Agreement i.e. MOU, Certificate of Incorporation as subsidiary of Principal Manufacturer to be enclosed for manufacturer quoting under Indian Manufacturing Entity of Principal Manufacturer).

5. In the event of failure on the part of Indian Collaborator/Licensee/ Indian Subsidiary/ Indian Manufacturing Entity in fulfilment of contractual obligations or closure of Indian Collaborator/ Licensee/ Indian Subsidiary/ Indian Manufacturing Entity for any unforeseen reason, we shall take the responsibility to make alternate

arrangements to support CIL as well as execute the remaining period of the contract our selves or through another competent Indian entity fulfilling the eligibility criteria stipulated in the tender document under clause. 5.1.v), 6.(i), 6.(ii) of ITB, as applicable.

6. We undertake for the successful performance of the equipment with the indigenisation carried out by the indigenous manufacturer during lifetime of the equipment.
7. We confirm to ensure the supply of spares & consumables and service support for smooth running of the equipment throughout its life for the equipment throughout its life for the equipment being offered.
8. We confirm our acceptance to be a signatory to the contract in case of acceptance of offer of our Indian Collaborator /Licensee/ Indian Subsidiary/ Indian Manufacturing Entity of Foreign Manufacturer.

(Signature)
(Name)
(Designation)
(Seal)
Signed for and on behalf of [Name of manufacturers].

Note:

a. This letter of authority should be on the letter head of the Manufacturer and should be signed by a person competent and having the "Authority" to bind the Manufacturer. If the said document conferring the authority is Article of Association of Company, Partnership Deed of a Registered Firm or any resolution of the company, then the notarized copy of the same should be uploaded. In other cases, the letter of authority should be a Power of Attorney sufficient to bind the Manufacturer.

b. Notarized copy of their collaboration agreement / license agreement with the foreign collaborator which should be valid as on the date of opening of the tender and should also remain valid atleast up to supply and commissioning of equipment.

c. Notarized copy of MOU /Certificate of Incorporation as subsidiary of Principal Manufacturer to be enclosed for Manufacturer under Indian Subsidiary/ Indian Manufacturing Entity of Principal manufacturer.

Annexure- 5

Format for submitting price break up for Consumables Spares & Consumables for first 12 months of warranty period quoted in INR for each equipment

For Consumables Spares & Consumables for first 12 months of warranty period from the date of commissioning of Equipment quoted in INR														
			Unit Values (in Rs.)											
Sl. No.	Item Description with part no. (if any)	Unit of Measurement (UOM)	FOR Destination Price	GST		Landed Price	Input Tax credit Amount	Net Landed Price after deducting Input Tax credit	Quantity of Consumables Spares & Consumables Quoted per equipment	Total FOR Destination Price per equipment	Total GST Amount per equipment	Total Landed Price for Consumables Spares & Consumables for first 12 months of warranty period per equipment without deducting Input Tax credit (in Rs.)	Total Net Landed Price for Consumables Spares & Consumables for first 12 months of warranty period per equipment after deducting Input Tax credit (in Rs.)
				Rate	Amount								
1	2	3	4	5	6=4*5	7= 4+6	8=6	9=7-8	10	11= 4*10	12= 6*10	13=7 *10	14= 9*10
	Consumables Spares												
	Description	Part No.											
	Consumables												
	Description	Full specification											
									TOTAL	**X1**	**X2**		

Note:- 1. Templates for BOQ in excel format will be designed suitably in line with the above format.
2. ‘X1’ & ‘X2’ values should be entered in the INR sheet of BOQ template.

Annexure- 6

Format for submitting price break-up for Spares & Consumables from 2nd to … year, …th to …th year, …th to …th year and …th to …th year (as the case may be) of operation quoted cluster-wise in INR separately for each equipment

For Spares & Consumables for 2nd to … year, …th to …th year, …th to …th year and …th to …th year (as the case may be) of operation quoted cluster-wise in INR separately for each equipment														
			Unit Values (in Rs.)											
Sl. No.	Item Description with part no. (if any)	Unit of Measurement (UOM)	FOR Destination Price	GST		Landed Price	Input Tax credit Amount	Net Landed Price after deducting Input Tax credit	Cluster-wise Quantity of Spares & Consumables Quoted per equipment	Cluster-wise Total FOR Destination Price per equipment	Cluster-wise Total GST Amount per equipment	Cluster-wise Total Landed Price of Spares & Consumables for 2nd to … year, …th to …th year, …th to …th year and …th to …th year (as the case may be) of operation per equipment without deducting Input Tax credit (in Rs.)	Cluster-wise Total Net Landed Price of Spares & Consumables for 2nd to … year, …th to …th year, …th to …th year and …th to …th yearr (as the case may be) of operation per equipment after deducting Input Tax credit (in Rs.)
				Rate	Amount								
1	2	3	4	5	6=4*5	7= 4+6	8=6	9=7-8	10	11= 4*10	12= 6*10	13=7*10	14=9*10
	Spares												
	Description	Part No.											
	Consumables												
	Description	Full Specification											
									TOTAL	**Y1**	**Y2**		

Note:- 1. Templates for BOQ in excel format will be designed suitably in line with the above format.
2. ‘Y1’ & ‘Y2’ values should be entered in the INR sheet of BOQ template.

Annexure-7

Format for submitting price break-up for items sourced in INR (for bidders quoting in Foreign currency) for fitment in the equipment during its commissioning for each equipment

For items sourced indigenously in INR (by bidders quoting for equipment in foreign currency) for fitment in the equipment during commissioning of the equipment															
					Unit Values (in Rs.)										
						GST									
Sl. No.	Item Description with Make, Model & Part No. (if applicable)			Unit of Measurement (UOM)	FOR Destination Price	Rate	Amount	Landed Price	Input Tax credit Amount	Net Landed Price after deducting Input Tax credit (in Rs.)	Quantity of items required per equipment	Total FOR Destination Price of all items sourced indigenously for fitment in the equipment during commissioning of the equipment	Total GST Amount of all items sourced indigenously for fitment in the equipment during commissioning of the equipment	Total Landed Price for all Items sourced indigenously in INR for fitment in the equipment during commissioning of the equipment without deducting Input Tax credit (in Rs.)	Total Net Landed Price for Items sourced indigenously in INR for fitment in the equipment during commissioning of the equipment after deducting Input Tax credit (in Rs.)
1	2			3	4	5	6=4*5	7= 4+6	8=6	9=7-8	10	11= 4*10	12= 6*10	13=7 *10	14= 9*10
	Item Description	Item Make & Model	Part No./ Full specification												
											TOTAL	Z1	Z2		

Note:- 1.Templates for BOQ in excel format will be designed suitably in line with the above format.
2.'Z1' & 'Z2' values should be entered in the appropriate column of OTHER_CURRENCY sheet of BOQ template.

Annexure - 8

Format for submitting price break up for Consumables spares & consumables for first 12 months of warranty period quoted in foreign currency for each equipment

For Consumables Spares & consumables quoted in foreign currency for first 12 months of warranty period from the date of commissioning for each Equipment																																										
Sl. No.	Item Description with part no. (if Any)		Unit of Measurement (UOM)	Unit Price to be quoted in Foreign currency						Unit Values shown in foreign currency but to be paid in INR										Unit Values in Indian Rupees																								
				FOB Price	Indian Agency Commission if any as a % of unit FOB price included in the quoted FOB Price	Marine Freight Charges upto Port of Entry in India	Marine Insurance Charges	CIF Price at Port of Entry in India	Assessable Value = CIF Price	Basic Customs Duty (BCD) on Assessable Value		Social Welfare Surcharges on BCD		IGST		Total Customs Duty	GST on Marine Freight Charges		GST on Indian Agency Commision		Port charges, clearing forwarding charges & other incidental charges (In INR)	GST on Port charges, clearing forwarding charges & other incidental charges (In INR)		Inland Transportation & Insurance for delivery upto Final Place of Destination (In INR)	GST on Inland Transportation & Insurance for delivery upto Final Place of Destination (In INR)		CIP Final Place of Destination Price with Customs Duty		Input Tax Credit		Net Landed Price after deducting input Tax credit on GST for the Project		Quantity of Consumable Spares & Consumables Quoted per Equipment of the Project	Total FOB Price per Equipment	Total Marine Freight Charges upto Port of Entry in India per equipment	Total Marine Insurance Charges per equipment	Total Basic Customs Duty (BCD) per equipment	Total IGST per equipment	Total Port charges, clearing forwarding charges and other incidental charges per equipment	Total Inland Transportation & Insurance for delivery upto Final Place of Destination per equipment	Total Landed Price for Consumable Spares & Consumables for first 12 months of warranty period per equipment before deducting Input Tax credit		Total Net Landed Price for Consumable Spares & Consumables for first 12 months of warranty period per equipment after deducting Input Tax credit	
										Rate	Value	Rate	Value	Rate	Value		Rate	Value	Rate	Value	Rate	Value	Rate	Value	OTHER CURRENCY	INR	OTHER CURRENCY	INR	OTHER CURRENCY	INR									OTHER CURRENCY	INR	OTHER CURRENCY	INR
1	2		3	4	5	6	7	8=4+6+7	9=8	10	11 = 9*10	12	13 = 11*12	14	15 = (9+11+13) *14	16=(11+13+15)	17	18=6*17	19	20=14*5)*19	21	22	23=21*22	24	25	26=24*25	27=9+16+18+20	28=21+23+24+26	29=15+18+20	30=22+26	31=27-29	32=26-30	33	34= 4*33	35= 6*33	36=7*33	37= 11*33	38= 15*33	39=21*33	40=24*33	41=27*33	42=28*33	43=31*33	44=32*33
	Consumables Spares																																									
	Description	Part No.																																								
	Consumables																																									
	Description	Full specification																																								
																																TOTAL	X1	X2	X3	X4	X5	X6	X7				

Note:- 1. Templates for BOQ in excel format will be designed suitably in line with the above format.

2. 'X1','X2','X3','X4','X5','X6'&'X7' value should be entered in the OTHER_CURRENCY sheet of BOQ template.

Annexure-9

Format for submitting price break-up for Spares & Consumables from 2nd to … year, …th to …th year, …th to …th year and …th to …th year (as the case may be) of operation quoted cluster-wise in Foreign Currency for each Equipment

For Spares & Consumables for 2nd to … year, …th to …th year, …th to …th year and …th to …th year (as the case may be) of operation quoted cluster-wise in foreign currency separately per equipment																																												
Sl. No.	Item Description with part no. (if Any)		Unit of Measurement (UOM)	Unit Price to be quoted in Foreign currency						Unit Values shown in foreign currency but to be paid in INR											Unit Values in Indian Rupees																							
				FOB Price	Indian Agency Commission if any as a % of unit FOB price included in the quoted FOB Price	Marine Freight Charges upto Port of Entry in India	Marine Insurance Charges	CIF Price at Port of Entry in India	Assessable Value = CIF Price	Basic Customs Duty (BCD) on Assessable CIF Value		Social Welfare Surcharge on BCD		IGST		Total Customs Duty	GST on marine freight		GST on Indian Agency Commission		Port charges, clearing forwarding charges & other incidental charges (In INR)	GST on Port charges, clearing forwarding charges & other incidental charges **(In INR)**		Inland Transportation & Insurance for delivery upto Final Place of Destination **(In INR)**	GST on Inland Transportation & Insurance for delivery upto Final Place of Destination (In INR)		CIP Final Place of Destination Price with Customs Duty		Input Tax Credit		Net Landed Price after deducting input Tax credit on GST per equipment		Cluster-wise Quantity of Spares & Consumables Quoted per equipment	Cluster-wise Total FOB Price per equipment	Cluster-wise Total Marine Freight Charges upto Port of Entry in India per equipment	Cluster-wise Total Marine Insurance Charges per equipment	Cluster-wise Total Basic Customs Duty (BCD) per equipment	Cluster-wise Total IGST per equipment	Cluster-wise Total Port charges, clearing forwarding charges and other incidental charges per equipment	Cluster-wise Total Inland Transportation & Insurance for delivery upto Final Place of Destination per equipment	Cluster-wise Total Landed Price of Spares & Consumables for 2nd to …th year, …th to …th year, …th to …th year and …th to …th year (as the case may be) of operation per equipment before deducting Input Tax credit		Cluster-wise Total Net Landed Price of Spares & Consumables for 2nd to … year, …th to …th year, …th to …th year and …th to …th year (as the case may be) of operation per equipmentafter deducting Input Tax credit	
										Rate	Value	Rate	Value	Rate	Value		Rate	Value	Rate	Value		Rate	Value		Rate	Value	OTHER CURRENCY	INR	OTHER CURRENCY	INR	OTHER CURRENCY	INR									OTHER CURRENCY	INR	OTHER CURRENCY	INR
1	2		3	4	5	6	7	8=4+6+7	9=8	10	11 = 9*10	12	13 = 11*12	14	15 = (9+11+13) *14	16=(11+ 13+15)	17	18=6*17	19	20=(4*5) *19	21	22	23=21*22	24	25	26=24 *25	27=8+16+18 +20	28=21+ 23+24+ 26	29=15+18+ 20	30=23 +26	31=27-29	32=28-30	33	34= 4*33	35= 6*33	36=7*33	37= 11*33	38= 15*33	39=21*33	40=24*33	41=27*33	42=28*33	43=31*33	44=32*33
	Spares																																											
	Description	Part No.																																										
	Consumables																																											
	Description	Full Specification																																										
																																		TOTAL	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**				

Note:- 1. Templates for BOQ in excel format will be designed suitably in line with the above format.
2.'Y1','Y2','Y3','Y4','Y5','Y6' & 'Y7' value should be entered in the OTHER_CURRENCY sheet of BOQ template.

Annexure-10

Details of Training Charges

Tender No. CIL/C2D/_____/_____/_____ Dated DD/MM/YYYY

1	2	3	4	5	6	7	8	9	10	11
Sl no.	Type of Personnel	At Manufacturer's Training Facility available in India				At Site				Total Charges
		No.	Period (Week)	Total Man Weeks (3x4)	Rate Per Man Per Week	No.	Period (Week)	Total Man Weeks (7x8)	Rate Per Man per week	(5x6)+(9x10)
					Rs				Rs	Rs

Signature and Seal
of the Bidder

Note:

1. The details of Training Charges are to be given separately for each project alongwith Price- Bid in Cover-II under the folder named "BOQ 2".

2. However, a confirmation of the same is to be given in the techno-commercial bid (Cover-I) **without indicating prices.**

Annexure-11

Contract Format

This Agreement made the _____day of _____20—between (name of Purchaser with full address and country of Purchaser) (hereinafter referred to as the "Purchaser" **which expression shall unless repugnant to the context or meaning thereof, includes its successors**) of the one part and (Name of **Manufacturer** with full address and country of **Manufacturer**) (hereinafter referred to as the "Supplier"- (wherever the manufacturer is directly submitting the bid. In the event of submission of bid through an Indian Agent/ Indian Office/ Indian Subsidiary of Manufacturer, the following is to be added as **Manufacturer represented by ----name and full address of the Indian Agent/** Indian Office/ Indian Subsidiary) (hereinafter referred to as the "Supplier" **which expression shall unless repugnant to the context or meaning thereof, includes its successors and permitted Assigns)** of the other part.

WHEREAS the Purchaser invited bids for certain Goods and ancillary Services, viz (Brief description of Goods and Services) and has accepted a bid by the supplier for the supply of those Goods and Services in the sum of (Contract Price in words and figures) (hereinafter "the Contract Price")

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meaning as are respectively assigned to them in the conditions of Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement viz.

   (a) the Techno- Commercial Bid and Price-Bid submitted by the Bidder
   (b) the Schedule of Requirements & Delivery Schedule
   (c) the Technical Specifications
   (d) the General Conditions of Contract
   (e) the Special Conditions of Contract
   (f) the Purchaser's Notification of Award
   (g) the Pre-Contract Integrity Pact

3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

5. Brief particulars of the Goods and Services which shall be supplied /provided by the Supplier are as under:

Sl. No.	Name of Project	Brief Description of goods and services	Quantity to be supplied	Unit Price	Total Price	Delivery Terms: (CIP / FOR Destination etc.)

IN WITNESS whereof the Parties hereto have caused this Agreement to be executed the day and year first above written.

Signed, Sealed and Delivered by the
Said (name of representative)

For the Purchaser

Name ----------
Designation----------
Name of Company------

Witnesses:

1. Name ----------
   Designation----------
   Name of Company------

2. Name ----------
   Designation----------
   Name of Company------

Signed, Sealed and Delivered by the
Said (name of representative)

For the Supplier

Name ----------
Designation----------
Name of Company-----

Witnesses:

1. Name ----------
   Designation----------
   Name of Company------

2. Name ----------
   Designation----------
   Name of Company------

Note: In case the successful bidder happens to be an authorised Indian Agent/ Indian Office/ Indian Subsidiary of foreign manufacturer, a tripartite contract will be concluded with the bidder, alongwith the foreign manufacturer.

Annexure-12

Security Deposit Bank Guarantee Proforma

……..……. (Name & address of the Purchaser) …… Company)

Re : Bank Guarantee in respect of Agreement dated ..... Day of.....20…between…. ……(Name of Purchaser Company) and……(Name of Supplier Company)

Messers .....a company / Firm having its office at No. .....hereinafter called the Contractor has entered into the said agreement dated…….....(hereinafter called 'the said agreement') with ……(Name of the Purchaser Company) hereinafter called(the company) to supply……stores/materials amounting to Rs. ……on the terms and conditions contained in the said agreement.

It has been agreed that .....(.....percent) payment of the value of the stores/materials will be made to the Contractor in terms of the said agreement on the contractors furnishing to the company a bank guarantee for the sum of Rs.....as security for due repayment of the said sum in terms of the said agreement, and also interest as therein provided.

The……..... (Name of the Bank) having its office at.....has at the request of the Contractor agreed to give the guarantee as hereinafter contained.

We.....(Name of the Bank) (hereinafter called 'the Bank) do hereby unconditionally agree with the Company that if the Contractor shall in any way fail to observe or perform the terms and conditions of the said agreement regarding repayment of the said sum of Rs ……or any of them including the term for payment of interest for delay in deliveries or shall commit any breach of its obligations thereunder, the Bank shall on demand and without any objection or demur pay to the Company the said sum of Rs…….or such portion as shall then remain unpaid with interest without requiring the company to have recourse to any legal remedy that may be available to it to compel the Bank to pay the same, or calling on the company to compel such payment by the contractor.

Any such demand shall be conclusive as regards the liability of the Contractor to the Company and as regards the amount payable by the Bank under this guarantee. The Bank shall not be entitled to withhold payment on the ground that the contractor has disputed its liability to pay or has disputed the quantum of the amount or that any arbitration proceeding or legal proceeding is pending between the Company and the contractor regarding the claim.

We, the Bank- further agree that the guarantee shall come into force from the date hereof and shall remain in full force and effect till the period that will be taken for the performance of the said agreement which is likely to be the……..day of……but if the period of agreement is extended either pursuant to the provisions in the said agreement or by mutual

agreement between the contractor and the Company the Bank shall renew the period of the guarantee failing which it shall pay to the Company the said sum of Rs……, or s u c h lesser amount out of the said sum of Rs … … … … … . . as maybe due to the Company and as the Company may demand. This guarantee shall remain in force until the dues of the Company in respect of the said sum of Rs……..... and interest are fully satisfied and the company certifies that the agreement regarding re-payment of the said sum of Rs.....has been fully carried out by the contractor and discharges the guarantee.

The Bank further agrees with the Company that the Company shall have the fullest liberty without the consent of the Bank and without affecting in any way the obligations hereunder to vary any of the terms and conditions of the said agreement or to extend the time for performance of the said agreement from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the contractor and to forbear to enforce any of the terms and conditions relating to the said agreement and the Bank shall not be relieved from its liability by reason of such failure or extension being granted to the contractor or through any forbearance, act or omission on the part of the Company or any indulgence by the Company to the contractor or any other matter or thing whatsoever which under the law relating to sureties would but for this provisions have the effect of relieving or discharging the Guarantor.

The Bank further agrees that in case this guarantee is required for a longer period and it is not extended by the Bank beyond the period specified above the Bank shall pay to the Company the said sum of Rs……or such lesser sum as may then be due to the Company out of the said advance of Rs…….and as the Company may require.

Notwithstanding anything herein contained the liability of the Bank under this guarantee is restricted to Rs……only. The guarantee shall remain in force till the……. day of ……..and unless the guarantee is renewed or a claim is preferred against the Bank within 3 months from the said date all rights of the company under this guarantee shall cease and the Bank shall be released and discharged from all liability hereunder except as provided in the preceding clause.
The Bank has under its constitution power to give this guarantee and…….. (Name of the person) who has signed it on behalf of the Bank has authority to do so.

Dated this……day of ……20……
Place…… Signature of the authorised person
For and on behalf of the Bank.

Annexure-13

Performance Bank Guarantee Format

……..……. (Name & address of the Purchaser) …… Company)

Re : Bank Guarantee in respect of Agreement dated ..... Day of.....20…between…. ……(Name of Purchaser Company) and……(Name of Supplier Company)

Messers .....a company / Firm having its office at No. .....hereinafter called the Contractor has entered into the said agreement dated…….....(hereinafter called 'the said agreement') with ……(Name of the Purchaser Company) hereinafter called(the company) to supply……stores/materials amounting to Rs. ……on the terms and conditions contained in the said agreement.

It has been agreed that .....(.....percent) payment of the value of the stores/materials will be made to the Contractor in terms of the said agreement on the contractors furnishing to the company a bank guarantee for the sum of Rs.....as security for due repayment of the said sum in terms of the said agreement, and also interest as therein provided.

The……..... (Name of the Bank) having its office at.....has at the request of the Contractor agreed to give the guarantee as hereinafter contained.

We.....(Name of the Bank) (hereinafter called 'the Bank) do hereby unconditionally agree with the Company that if the Contractor shall in any way fail to observe or perform the terms and conditions of the said agreement regarding repayment of the said sum of Rs ……or any of them including the term for payment of interest for delay in deliveries or shall commit any breach of its obligations thereunder, the Bank shall on demand and without any objection or demur pay to the Company the said sum of Rs…….or such portion as shall then remain unpaid with interest without requiring the company to have recourse to any legal remedy that may be available to it to compel the Bank to pay the same, or calling on the company to compel such payment by the contractor.

Any such demand shall be conclusive as regards the liability of the Contractor to the Company and as regards the amount payable by the Bank under this guarantee. The Bank shall not be entitled to withhold payment on the ground that the contractor has disputed its liability to pay or has disputed the quantum of the amount or that any arbitration proceeding or legal proceeding is pending between the Company and the contractor regarding the claim.

We, the Bank- further agree that the guarantee shall come into force from the date hereof and shall remain in full force and effect till the period that will be taken for the performance of the said agreement which is likely to be the……..day of……but if the period of agreement is extended either pursuant to the provisions in the said agreement or by mutual agreement between the contractor and the Company the Bank shall renew the period of the guarantee failing which it shall pay to the Company the said sum of Rs……., or such lesser amount out of the said sum of Rs……..as maybe due to the Company and as the Company may demand. This guarantee shall remain in force until the dues of the Company in respect of the said sum of Rs……... and interest are fully satisfied and the company certifies that the agreement regarding re-payment of the said sum of Rs.....has been fully carried out by the contractor and discharges the guarantee.

The Bank further agrees with the Company that the Company shall have the fullest liberty without the consent of the Bank and without affecting in any way the obligations hereunder to vary any of the terms and conditions of the said agreement or to extend the time for performance of the said agreement from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the contractor and to forbear to enforce any of the terms and conditions relating to the said agreement and the Bank shall not be relieved from its liability by reason of such failure or extension being granted to the contractor or through any forbearance, act or omission on the part of the Company or any indulgence by the Company to the contractor or any other matter or thing whatsoever which under the law relating to sureties would but for this provisions have the effect of relieving or discharging the Guarantor.

The Bank further agrees that in case this guarantee is required for a longer period and it is not extended by the Bank beyond the period specified above the Bank shall pay to the Company the said sum of Rs……or such lesser sum as may then be due to the Company out of the said advance of Rs…….and as the Company may require.

Notwithstanding anything herein contained the liability of the Bank under this guarantee is restricted to Rs……only. The guarantee shall remain in force till the……. day of ……..and unless the guarantee is renewed or a claim is preferred against the Bank within 3 months from the said date all rights of the company under this guarantee shall cease and the Bank shall be released and discharged from all liability hereunder except as provided in the preceding clause.
The Bank has under its constitution power to give this guarantee and…….. (Name of the person) who has signed it on behalf of the Bank has authority to do so.

Dated this……day of ……20……
Place…… Signature of the authorised person
For and on behalf of the Bank.

Annexure-14

PRE CONTRACT INTEGRITY PACT

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on…….day of the month of ……20…, between, on one hand, Coal India Limited/Subsidiary Cos. acting through Shri …….., Designation of the officer, (hereinafter called the "BUYER / Principal", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s. ……..represented by Shri……, Chief Executive Officer (hereinafter called the "BIDDER/Seller/Contractor" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure …….(Name of the Stores/Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Central Public Sector Unit.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Section 1 – Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

a. No employee of the Principal, personally or through family members, will in connection with the tender for , or the execution of a contract, demand ; take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

c. Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/ PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

(1) The Bidder(s) / Contractor(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s) / Contractor(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution.

a. The Bidder(s) / Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b. The Bidder(s) / Contractor(s) will not enter with other Bidders info any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non- submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.

c. The Bidder(s) / Contractor(s) will not commit any offence under the relevant IPC/ PC Act; further the Bidder(s) / Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s) / Contractors(s) of foreign origin shall disclose the name and address of the Agents/ representatives in India , if any, Similarly the Bidder(s) /Contractors(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any.

Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s) / Contractor(s).Further, as mentioned in the Guidelines all the payments made to the Indian agent/ representative have to be in Indian Rupees only. *The guidelines and terms and conditions for India agents of foreign supplier shall be as per the provisions mentioned in the NIT.*

e. The Bidder(s) / Contractor(s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

f. Bidder(s) / Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter.

(2) The Bidder(s) / Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder, before contract award, has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or credibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

(1) If the Bidder / Contractor / Supplier has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is also entitled to exclude the

Bidder / Contractor / Supplier from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case. In particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.

(2) A transgression is considered to have occurred if the Principal, after due consideration of available facts and evidences within his / her knowledge concludes that there is a reasonable ground to suspect violation of any commitment listed under Section 2 i.e " Commitments of Bidder(s) / Contractor(s).

(3) The Bidder accepts and undertakes to respect and uphold the Principal's absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

(4) If the Bidder / Contractor / Supplier can prove that he has restored / recouped the

damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely."

Section 4 - Compensation for Damages

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5 - Previous transgression

(1) The Bidder declares that no previous transgressions occurred in the last three years with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings".

Section 6 - Equal treatment of all Bidders / Contractors / Subcontractors

(1) In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor.

(2) The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.

(3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 - Criminal charges against violating Bidder(s) / Contractor(s) / Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8 - Independent External Monitor

(1) The Principal appoints competent and credible Independent External Monitor for this Pact after approval by Central Vigilance Commission. The task of the Monitor is to review

independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his/ her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him / her to treat the information and documents of the Bidders/Contractors as confidential.
He/ she reports to the Chairman, Coal India Limited / CMD, Subsidiary Companies

(3) The Bidder(s) / Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his/ her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-contractors.

(4) The Monitor is under contractual obligation to treat the information and documents of the Bidder(s) / Contractor(s) / Sub-contractor(s) with confidentiality. The Monitor has also signed declarations on 'Non-Disclosure of Confidential Information ' and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date, the IEM shall inform Chairman, Coal India Limited / CMD, Subsidiary Companies and recuse himself / herself from that case.

(5) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

(6) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/ she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

(7) The Monitor will submit a written report to the Chairman, Coal India Limited / CMD, Subsidiary Companies within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

(8) If the Monitor has reported to the Chairman, Coal India Limited / CMD, Subsidiary Companies, a substantiated suspicion of an offence under relevant IPC/ PC Act, and the Chairman, Coal India Limited / CMD, Subsidiary Companies has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.

If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by Chairman Coal India Limited / CMD, Subsidiary Companies.

Section 10 - Other provisions

(1) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(2) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

(3) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(4)Issues like Warranty / Guarantee etc. shall be outside the purview of IEMs.

(5) In the event of any contradiction between the Integrity Pact and its Annexure, the Clause in the Integrity Pact will prevail.

Section 11- Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

Section 12- Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

Section 13 - Other Legal Actions.

The actions stipulated in this Integrity Pact are without prejudice to any other legal action

that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

(For & On behalf of the Principal)	(For & On behalf of Bidder/ Contractor)
(Office Seal)	(Office Seal)
Place ---------- Date ----------	
Witness 1: (Name & Address)	Witness 1: (Name & Address)
Witness 2: (Name & Address)	Witness 2: (Name & Address)

Annexure - 15

Pro-forma of Commissioning Certificate to be issued by the Purchaser after Successful Commissioning of Equipment/Plant

No. : Date :

M/s:

Sub : Certificate of Commissioning of Equipment/Plant

1. This is to certify that the equipment/ plant as detailed below has been received in good condition along with all the standard and special accessories and a set of spares in accordance with the Contract / specifications. The same has been installed and commissioned as detailed below:.

   (a) Contact No._____ Date_____

   (b) Description and Model of the Equipment/Plant _____

   (c) Details of Commissioning:

Manufacturer's Equipment / Plant Sl. No.	Date of Commissioning (date/month/year)

   (d) Bill of Lading No. & Date _____
   (for imported contract)

   (e) Name of the Vessel / Transporter _____

   (f) R/ R Consignment Note/ Challan No. _____ Date_____

   (g) Date of receipt of last consignment of equipment _____

   (h) Name of the Project/ Consignee _____

2. Details of Accessories / Spares & Consumables for warranty period not yet supplied and recoveries to be made on that account :

   Sl. No. Description Amount to be recovered

3. The proving test has been done to our entire satisfaction and operators have been trained to operate the plant.

4. The supplier has fulfilled his contractual obligations for successful commissioning satisfactorily:

   Or

   The supplier has failed to fulfil his contractual obligations with regard to the following:
   (a)
   (b)
   (c)
   (d)

5. The amount of recovery on account of non-supply of accessories and spares is given under paragraph number 2.

6. The amount of recovery on account of failure of the Supplier to meet his contractual obligations is as indicated in endorsement of the letter.

Signature (s)

Name(s)

Designation(s) with Stamp

Explanatory notes for filling up the commissioning certificate by the Purchaser

(a) He has adhered to the time schedule specified in the contract in dispatching the documents / drawings pursuant to Technical Specifications.
(b) He has supervised the commissioning of the plant in time, i.e. within the period specified in the Contract from the date of intimation by the Purchaser in respect of the installation of the plant.

The commissioning certificate shall be signed by the concerned officials of the Project and counter-signed by the Area General Manager and HOD of Excavation Deptt. of subsidiary company.

In the event of documents / drawings having not been supplied or installation and commissioning of the plant having been delayed on account of the Supplier, the extent of delay should always be mentioned.

Annexure - 16

Format for Bank Details for Electronic Payment

To
M/s. Coal India Ltd.,
1st Floor, Premises No. 04,
Plot no. AF-III, Action Area 1A,
New Town, Kolkata – 700 156.

Dear Sir,

Sub: Authorization of all our payments through Electronic Fund Transfer system/RTGS/NEFT/LC.

We hereby authorize Coal India Ltd. to disburse all our payments through Electronic Fund Transfer system/RTGS/NEFT/LC. The details for facilitating the payment are given below:

1	Name of the Beneficiary, address with Telephone No.	
2	Bank name, address with Telephone No.	
3	Branch name & code	
4	Bank account number with style of account (Savings/Current)	
5	IFSC Code No./Swift Code of the Bank	
6	PAN No. of the Beneficiary	
7	E-Mail No. and Mobile No. of the Beneficiary for intimation of release of payment.	

I/We hereby declare that particulars given above are correct and complete and if the transaction is delayed or credit is not effected due to incorrect information, I/we will not hold Coal India Ltd. responsible.

Authorized Signatory
Name:
Official Stamp with date

Bank Certification

It is certified that above mentioned beneficiary holds a Bank Account No. …….. with our branch and the Bank particulars mentioned above are correct.

Authorized Signatory
Name:
Official Stamp with date

Annexure – 17

Proforma for Equipment And Quality Control

Reference : CIL/Subsidiary Co._____
Tender No._____
Date_____for supply of _____

1. Name and Address of the Firm

2. (a) Telephone No. office/factory/works
(b) Fax No. / E-mail ID

3. Location of manufacturing works/factories owned by the firm (documentary evidence of ownership must be produced).

4. Brief description of the factory (i.e. area covered accommodation, Department into which it is divided, laboratory etc.)

5. Details of plant and machinery erected and functioning in each department (monographs and description pamphlets) be supplied if available.

6. Whether the process of manufacture in the factory is carried out with the aid of power or without it.

7. Details and stocks of raw materials held.

8. Production capacity of items quoted for with the existing plants and machinery
(a) Normal
(b) Maximum

9. Details of arrangements for quality control products such as laboratories etc.

10. (a) Details of technical supervisory staff in-charge of production and quality control.
(b) Skilled labour employed.
(c) Unskilled labour employed
(d) Maximum number of workers (skilled and unskilled) employed on any day during 18 months preceding the date of application.

11. Whether stores were tested to any standard specification, if so, copies of original test certificate should be submitted in duplicate. ……..

(Signature of Tenderer)
NB: Details against sl nos. 5 to 11 inclusive need be restricted to the extent they pertain to the items under reference

Annexure – 18

Check list of Documents to be uploaded in Techno-commercial bid (Technical)

The Bidder shall upload the scanned copies of the following documents in suitable folders/spaces in Technical Bid as mentioned below:

Sl. No.	Document	NIT Clause Ref. No.	Folder Names
	All documents relating to provenness criteria as per clause-7	Sec.-II, ITB, clause-7 & clause-17. A	PROVENNESS DOCs
	Documents establishing bidders eligibility and qualifications 17.A.(i).c, d, e; 17.A.(ii). f, g, h; 17.A.(iii), f, g, h; 17.A.(iv).g, h, i, j; 17.A.(v) to 17.A.(xi); 17.A.(xii).b and 17.A.(xiii)	Sec.-II, ITB, clause-17.	ELIGIBILTY TECHNICAL DOCs
1	Detailed schedule of all necessary oils, lubricants, fluids for the operation and maintenance of the equipment indicating the estimated annual consumption and specifying the appropriate international standard number or the name and the reference number of an equivalent available in India considered to be acceptable by the supplier, duly signed and stamped.	Sec-VI, Tech Specs, Part C, Clause-C.6.4	Tech Doc 2
2	Quality assurance plan for various stages of manufacture complying with an Internationally recognized quality assurance standard such as ISO 9000 or its equivalent.	Sec-VI, Tech Specs, Part C, Clause-C.10.1	Tech Doc 2
3	In case of any superseded or equivalent standards, offered against the ISO standards indicated in the NIT, documentary evidence in form of copies of such superseded /equivalent standards certifying that offered standards are identical to the corresponding ISO standards of NIT.	Sec-VI, Tech Specs, Part D, Clause - 2	Tech Doc 1
4	Last/Old Certificate for EPA Tire I or equivalent or higher from certifying agencies along with current EPA compliance certificate from engine manufacturer is to be enclosed.	Sec-VI, Tech Specs, Part D, Clause -4.1.	Tech Doc 1
5	The bidder shall specify in detail the proposed method of AC/DC drive control and upload the same duly signed and stamped,	Sec-VI , Tech Specs Part D, Clause-4.2.1 Electrical Drive System (AC or DC)	Tech Doc 2
6	Technical Details of offered centralized automatic lubrication system indicating the name of manufacturer and Indian equivalent of the recommended lubricants, duly signed and stamped.	Sec-VI, Tech Specs, Part D, Clause -4.12.	Tech Doc 2

7	(a)Technical Details of offered automatic fire detection and suppression system indicating the name of manufacturer, duly signed and stamped. (b)Certificate of Undertaking that, a valid test certificate (valid as on date of commissioning of equipment at site) shall be submitted at the time of supply of the equipment as per clause no. 4.13	Sec-VI, Tech Specs, Part D, Clause -4.13	Tech Doc 2
8	Certificate of Undertaking that, a valid test certificate (valid as on date of commissioning of equipment at site) shall be submitted at the time of supply of the equipment as per clause no. 4.20	Sec-VI, Tech Specs, Part D, Clause -4.20	Tech Doc 2
9	The manufacturers should submit a self-certificate explicitly stating that any one of the features as described and fitted in the Dumper shall provide additional protection to the operator and it shall not affect the normal operation of the Dumper on the gradients and its steer-ability, loading or dumping operations.	Sec-VI, Tech Specs, Part D, Clause-5.d Safety Features	Tech Doc 1
10	Technical Details of on board payload monitoring system with a feature to store & retrieve data of at least one month.	Sec-VI, Tech Specs, Part D, Clause-6.(g) Ancillary Equipment	Tech Doc 2
11	Technical Details of Self diagnostic and real time monitoring electronic tool.	Sec-VI, Tech Specs, Part D, Clause-6.(h) Ancillary Equipment	Tech Doc 2
12	Details of expected life of major assemblies before first overall as per table indicated.	Sec-VI, Tech Specs, Part D, Clause-9	Tech Doc 2
13	Self- certified information in respect of offered/ similar model of equipment supplied during last 10 years to be furnished as per the format given at clause - 10.1, General (a).	Sec-VI, Tech Specs, Part D, Clause -10.1 General (a)	Tech Doc 2
14	Details of Special tools to be provided along with equipment, duly signed and stamped.	Sec-VI, Tech Specs, Part D, Clause -10.1 General (b)	Tech Doc 2
15	Details of Erection programme, duly signed and stamped.	Sec-VI, Tech Specs, Part D, Clause -10.1 General (c)	Tech Doc 2

16	Technical Details in respect of all the points covered under clause-10.2 (a to p) along with calculations, drawings and curves/ graphs etc. duly signed and stamped.	Sec-VI, Tech Specs, Part D, Clause -10.2	Tech Doc 3
17	All values, information, description in respect of Clause – 10.3 & all its sub-clauses from 10.3.1 to 10.3.13, duly signed and stamped.	Sec-VI, Tech Specs, Part D, Clause -10.3	Tech Doc 4
18	Complete list of consumable spares and consumables required for first 12 months of warranty period from the date of commissioning of the equipment including additional 2 nos. tyres for each dumper (without prices). This list is to be given per equipment.	Sec.-VII, Sample Forms, Annexure - 5 or 8, as applicable	Tech Doc 5
19	Complete combined list of spares and consumables required for 2nd to 4th year of operation from the date of commissioning of the equipment (without prices). This list is to be given for each equipment. .	Sec.-VII, Sample Forms, Annexure - 6 or 9, as applicable	Tech Doc 5
20	Complete combined list of spares and consumables required for 5th to 7th year of operation from the date of commissioning of the equipment (without prices). This list is to be given for each equipment..	Sec.-VII, Sample Forms, Annexure - 6 or 9, as applicable	Tech Doc 5
21	Complete combined list of spares and consumables required for …th to ..th year of operation from the date of commissioning of the equipment (without prices). This list is to be given for each equipment...	Sec.-VII, Sample Forms, Annexure - 6 or 9, as applicable	Tech Doc 5
26	Complete list of items sourced in INR (for bidders quoting in Foreign currency) for fitment in the equipment during its commissioning (without prices). This list is to be given separately for each equipment	Sec.-VII, Sample Forms, Annexure - 7, as applicable	Tech Doc 5

Annexure – 18(contd.)

Check list of Documents to be uploaded in Techno - Commercial Bid (Commercial)

The bidder shall upload the scanned copies of the following documents in suitable folders / spaces in Techno-Commercial Bid as mentioned below:-

Sl	Document	Clause Ref No.	Folder Names
1	In case equipment manufacturer is quoting against the tender, documents indicated at clause- 17.A.(i) Commercial	Sec-II, ITB, clause-5.1(i) or (ii) & clause-17.A (i) Commercial	Commercial ELIGIBILITY DOCs
2	In case authorised Indian Agent is quoting on behalf of manufacturer, Manufacturer's Authorization Form along with Power of Attorney	Sec.-II, ITB, clause-5.1(iii) & Sec-VII, Sample Forms, Annexure-4.	Commercial ELIGIBILITY DOCs
3	In case authorised Indian Agent is quoting on behalf of manufacturer, documents indicated at clause- 17.A.(ii) & 17.(B) Commercial	Sec.-II, ITB, clause-5.1(iii) & clause - 17.A(ii) & 17.(B) Commerical	Commercial ELIGIBILITY DOCs
4	In case Indian Office or Indian Subsidiary of a Foreign Manufacturer / Indian Subsidiary of an Indian Manufacturer is quoting against the tender on behalf of the equipment manufacturer, Manufacturer's Authorization Form along with Power of Attorney	Sec.-II, ITB, clause-5.1(iv) & Sec-VII, Sample Forms, Annexure-4.	Commercial ELIGIBILITY DOCs
5	In case Indian Office or Indian Subsidiary of a Foreign Manufacturer / Indian Subsidiary of an Indian Manufacturer is quoting against the tender on behalf of the equipment manufacturer, documents indicated at clause- 17.A.(iii).	Sec.-II, ITB, clause-5.1(iv) & 17.A (iii) Commerical	Commercial ELIGIBILITY DOCs
6	In case a bidder has a foreign collaboration, all the documents as per clause 17.A.(xi)	Sec.-II, ITB, clause-6 & clause- 17.A(xi) Commercial	Commercial ELIGIBILITY DOCs
7	All other documents establishing bidder's eligibility and qualifications	Sec.-II, ITB, clause-14.2 (iv) (b) & clause-17 (A) & (B) Commercial	Commercial ELIGIBILITY DOCs
10	Letter of Bid (LOB) in the bidder's letter head as per format given at Annexure – 1, Sample Form, Sec-VII along with Power of Attorney.	Sec.-II, ITB, clause-14.2 (i), Sec.-VII Sample forms	LOB DOCs
11	In case the person who has signed LOB is not bidding himself and has authorized another person to bid online on his behalf, then the further authorization on non-judicial stamp paper duly notarized (as per Annexure-2) by the person singing the LOB in favour of person bidding online.	Sec.-II, ITB, clause-14.2 (i), Note	LOB DOCs
12	Details of bidder as per format given in Annexure –3, Sample Forms, Sec-VII.	Sec.-II, ITB, clause-14.2 (ii) & Annexure – 3, Sample Forms, Sec-VII	COMMERCIAL DOCs
13	Documentary evidence for direct remittance of EMD by foreign bidders.	Sec.-II, ITB, clause-16. A.II & clause-14.2.iv.a)	Instruction given in Clause- 16. A.II, ITB to be followed

Sl	Document	Clause Ref No.	Folder Names
14	Documentary evidence for Exemption from submission of Earnest Money Deposit.	Sec.-II, ITB, clause-16. B & clause-14.2.iv.a)	Instruction given in Clause- 16. B, ITB to be followed
15	Pre-Contract Integrity Pact duly filled-in, signed & stamped on each page.	Sec.-II, ITB, clause-14.2 (iv) (c) & clause-36 & Annexure-14, Sample Forms, Sec-VII	COMMERCIAL DOCs
16	Lowest Price certificate	Sec.-II, ITB, clause-14.2 (iv) (d) & Sec-IV, SCC, clause-9.2	COMMERCIAL DOCs
19	Notarised copies of registration certificate of NSIC/ BIS Licence and Approval certificates issued by other Independent Statutory Bodies of Govt. of India, if applicable.	Sec.-II, ITB, clause-14.6	COMMERCIAL DOCs
20	Bank details/ mandate form for e-payment	Sec-II, ITB, clause-16 (C), Annexure-16, Sample Forms, Sec-VII.	COMMERCIAL DOCs
21	Indigenous manufacturer to indicate the information for equipment with Project Concessional Duty (PCD) only. Not applicable for Foreign manufacturer and Indian agent of Foreign manufacturer.	Sec-II, ITB, Clause - 22.5.a), b), c)	BOQ 2
22	In case of the local supplier, a certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered account (in respect of suppliers other than companies) giving the percentage of local content.	Sec-II, ITB, Clause-37.3.a,	COMMERCIAL DOCs

Disclaimer: All obvious and minor mistake(s), if any, will be rectified while issuing specific NITs for the particular equipment.